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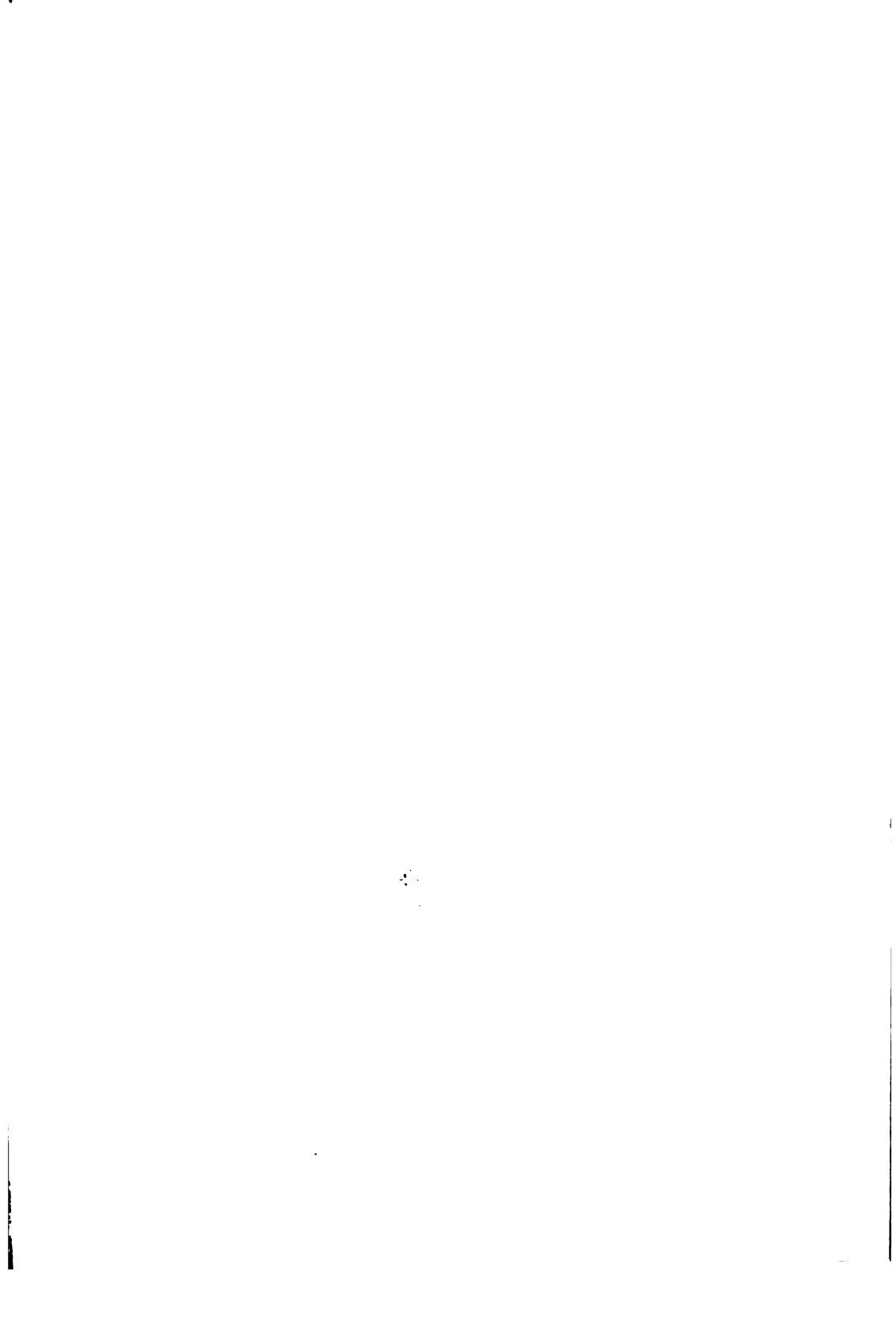
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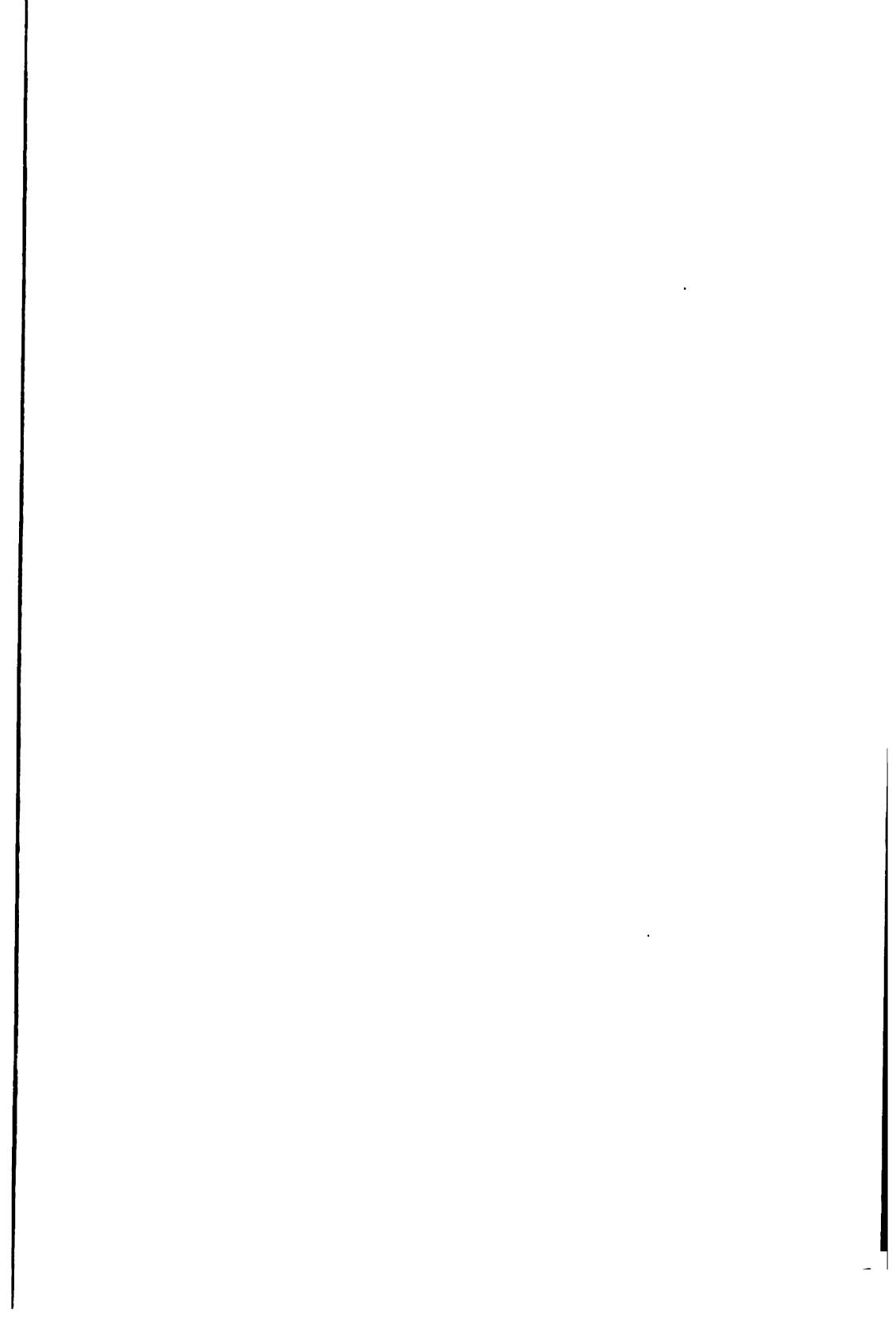


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EDITED BY

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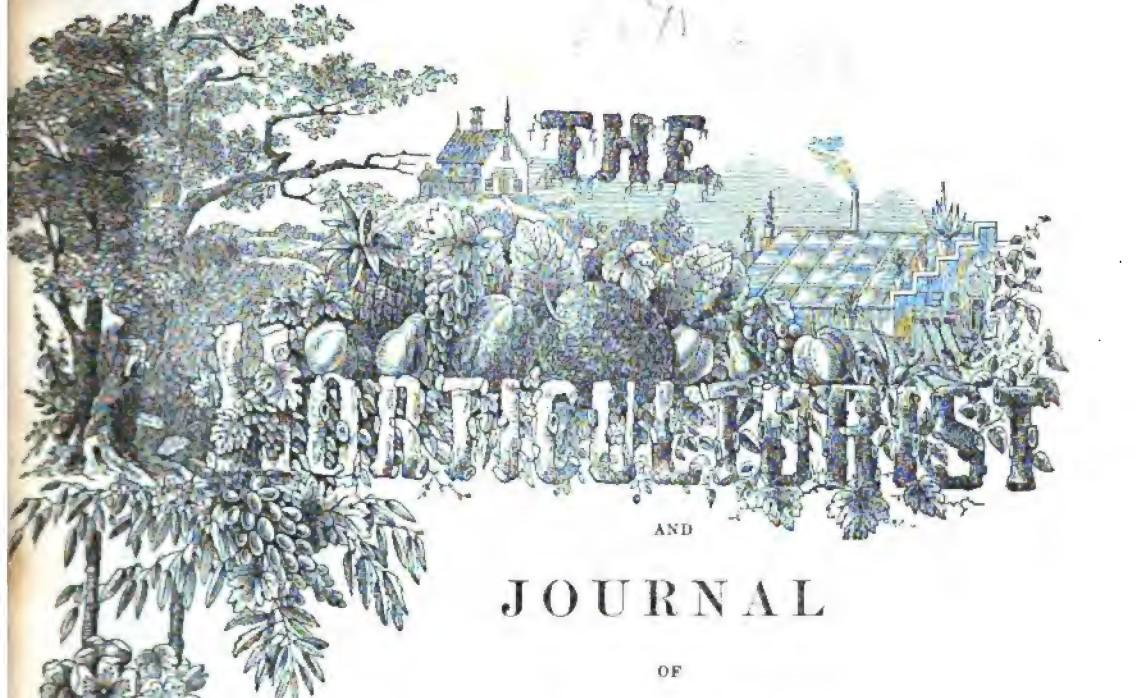
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A Word to the Trade.



It sometimes happens that an incidental departure from the rules which usually govern trade comes at last, by repetition, to be regarded in a measure as a part of those rules, and ceases to arrest the attention of the tradesman, though it may seriously involve his best interests. It is in this way only that we can account for the introduction among some of our nurserymen of a practice which we know to be detrimental to their pecuniary interests, and hurtful to the character of the profession. The practice we allude to may be fitly named that of "substitution and duplication;" in other words, the practice of substituting one plant for another, and duplicating others, without the least authority for so doing. Where the purchaser gives a discretion in the matter, it is all right enough; where he does not, it is clearly wrong. There are certain moral maxims which we ought all to recognize in our business transactions with each other; a temporary wresting of them may bring present gain, but at the expense of future loss which no good man ought to be willing to contemplate. In the words of Poor Richard, it is "paying too dear for the whistle." It often happens that the purchaser, by this practice, gets many kinds of plants or trees of which he already has enough; though the kinds sent may in some instances be quite as good as those ordered, still, he has not got what he sent for, and he is dissatisfied and annoyed, and justly so, and it seldom happens that he orders a second time of the same party. Now this is an injury not only to the individual party interested, but to the whole profession.

Now let us for a moment put the boot on the other leg. Suppose, for example, you send to our publisher for a copy of "Barry's Fruit Garden," and he sends you instead "Dodd's Horse Doctor." How would you like it? Would you be quite satisfied if he excused himself by saying that he was out of the "Fruit Garden," and thought the "Horse Doctor" would suit you as well? Would you not probably say to him, "Well, I guess I know what I want, and I don't want this 'Horse Doctor' at all?" Suppose, again, you

E usually and appropriately set apart the beginning of the year as a time for good resolutions; though, in our opinion, *any* time is a good one for such a purpose. As a new period of time, however, is by custom thought more fit than another, we take advantage of the New Year to offer some of our professional friends a few words of counsel and advice in regard to a practice which affects somewhat their good name. We hope to be able to say something that may induce them to form a resolution to avoid it for the future.

should send to a merchant for three yards of broadcloth, and he should send you three yards of green baize. How would you like that? You would probably get a little excited, and say to him, "I didn't ask you to send me baize; I've got enough of that already. What I want is broadcloth! You can take your old baize back again!" You would feel that he had been perpetrating a wrong, and resent it accordingly. If you condemn the want of fairness in such a transaction in others, how can you justify yourself? Wherein consists the difference? It is true that some nurserymen have in the introduction to their catalogues a clause that other kinds will be sent, "unless otherwise ordered;" and this is their justification. They no doubt honestly think they are doing what will be acceptable to their customers. Still, we must say candidly, in view of all we know and hear, that it would be better for all if no such clause existed. It leaves an opening for much dissatisfaction, which is sure, in the end, to tell against the seller. The purchaser does not always read the introduction to a catalogue, and seldom or never thinks of this "saving clause" in making out his list. He knows he wants certain kinds of plants, and orders them; if he gets others in their stead, he is vexed and dissatisfied, and, smarting under a sense of injury, condemns the whole trade in no measured terms, and concludes to buy no more plants if he can help it. We should be sorry to see the practice become common, for it would act as a serious clog to the advancement of horticulture, and lower the nursery business in the estimation of many good men. There is no necessity for it whatever, and nothing like it finds a place in other respectable pursuits. The example of many influential and successful nurserymen who do not resort to the practice, ought to be sufficient evidence of its impolicy. A man owes something to his family and his friends, and also to society; his good name and fame ought to be put above all price.

Every good business man must see the policy of satisfying the reasonable expectations of his customers; in this way alone can he hope to thrive. There may be individual exceptions, but this is the rule. What we would advise, therefore, is this: when you receive an order from a customer, neither substitute nor duplicate, but fill it as far as you can, and consult him in as to what you shall do in regard to the rest. So shall you make to yourself both riches and a good name.

OUR BATTERIES.

BY FOX MEADOW.

THE new year has burst upon us, and we hope that with it will burst many new and gloriously good practical ideas. No men in the world know so well the wants and necessities of the horticultural world, as our horticultural editors. The reason of this is, that they are constantly importuned on all the great questions pertaining to the subject. How many quandaries must flash across their minds while sitting *nice and cosy* in their "sanctum sanctorum!" These "sanctums" were never intended to be strong prison holds to bolt up any original idea that may not seem to conform to our every-day conventionalities. No; they were made for BATTERIES to fire the world's ideas from, into the hearts and heads of all within its reach. What is the worth of an idea? who can tell? The first impress that a puffing tea-kettle made, or the first

idea that struck a Galileo of a moving world, or the circulation of the blood in the body of a Harvey, or the circulation of sap in the plants we are cultivating: what is the value of the *first* of those ideas to-day? No man can tell. If we get into conversation with an individual upon vegetable physiology, we are wonder-struck with perhaps *one single idea*, which opens up a whole field of thought and study. The individual who used the remark never thought *that thought* before. The train of thought is carried on, a practical observation is made, and lastly the *idea* is demonstrated into a positive reality. We have sometimes felt an idea come from somewhere that the power of the organism seemed too weak to investigate, or to want the proper means of carrying out; but we never let that idea die; pass it on to some one else; once out of the original brain, and it will forever roll on until it is made and perfected according to the constituent elements of its own identity.

We have many times said to some of our friends, "Why don't you communicate your *idea* to the 'HORTICULTURIST,' 'Gardener's Monthly,' or any where you think proper? It's too good to be lost." "Can't write," is the reply. But if you should happen to get a letter from those very parties about cuttings, roots, plants, queries of any kind, they can with the greatest ease and fluency ask you a thousand questions, and tell you their good reasons for so doing. But they can't write to the Editor of the HORTICULTURIST, or any other editor, because they think he is something else than human nature, and knowing more of every thing else than any body else. Now this is not so. These gentlemen editors don't think this of themselves. They earnestly and sincerely call upon the gardeners, and those who may not happen to be gardeners, to send along their *ideas*. It is nothing but proper and right that we should ask such questions on various subjects that we can not comprehend. We can not comprehend "*mildew*." There is a sort of *whirlpool* of ideas afloat.

Query—Is mildew a parasite? Is it the *educt* of organic or inorganic disease? or is it the *product* of external circumstances? Is it a disease in the sap of the plant, brought up and through its organism, and left as an excrement on the stomata, and its constituent elements, under the action of atmospheric chemical changes, producing the fungi? or is it the *product* of certain *external* compositions forming vegetable life, and when so formed falls upon the healthy foliage of certain varieties of plants and destroys them? Some are of opinion that this fungi floats in the atmosphere, is inhaled through the leaves, and carried into and through the plant organism, and thrown out again in increased multitudes on the upper surface of the leaves; but how this is *possible*, I for one can not comprehend. If there is any law in vegetable physiology that warrants this statement, we hope the "*doctors*" will be kind enough to point it out. One thing we do know from experiment, that placing lumps of caustic lime at intervals through the house has prevented entirely any of its appearance throughout the whole season. It may be contended that the only action of this lime was that of absorbing carbonic acid; be that as it may, with me it is the chloride of lime for our vegetable sick-chamber. Whether the seeming purifying action of lime on the atmosphere is the prevention, or dissipates the elements which may combine to *form* vegetable life in the form we call fungi, or whether the plant *throws off* some vegetable mucus which may stop and clog up its stomata, through some uncongenial compound in the food by which it exists, and that the lime has some peculiar prop-

erty of *absorbing* or *decomposing* this exhalation, is what we should much like to know. It is of no avail to those who have to contend with this pest, to know that doctors A, B, and C know all about it; we want to know *how they know*. Neither is it much consolation to the inquiring mind to know that a preventive is at hand. He may feel thankful for his crop being saved; but this does not explain *cause and effect*. If you are growing a grape-vine in pot or tub, (forcing,) and saturate it well at the roots with ice-water, in thirty-six hours you will find it covered with mildew. You can do the same with any vine growing in a border in the house. Cold water will mildew roses and many other plants in the same way. Cold currents of air act nearly in the same manner, unless the vines are from their first commencement of growth perfectly inured. We hope the "doctors" will send up some good ideas to the "BATTERY" at 25 Park Row, New York, and while they are *analyzing*, the gardeners say they will be *thinking*.

[Yes, quandaries do indeed flash across an editor's mind as he sits in his sanctum, which make it any thing but "nice and cosy." A good editor, however, contrives to work them up into good ammunition with which he keeps his "Battery" well charged; but unless he has ability and knowledge of his own, he is just as apt to fire blank cartridge as round-shot. Fox Meadow is up to a good suggestion. By all means send us your *ideas*, and don't trouble yourselves too much about good writing: we'll take care of that; we are probably better judges of that kind of thing than you are. Now won't somebody pitch into mildew *in the right place*? We know that lime, as mentioned by Fox Meadow, is a good preventive, as we have tried it for years: it also has a good effect in keeping down red spider. Mildew is becoming a more formidable enemy every year, and our true policy is to fight it before it becomes firmly intrenched.—Ed.]

THE BEST WINE GRAPES.

BY S. MOSHER, LATONIA SPRINGS, KY.

You request my opinion as to the best native grape for the production of wine. In expressing my views on the subject, it must be understood that my remarks are confined to this section of country bordering upon the Ohio River, and confined to a limited number of varieties; and some of the most promising of these have as yet been subjected to a limited trial only for wine. Within the last twenty years I have had under cultivation and trial not less than thirty varieties of American grapes, and for vineyard culture and to furnish wine for the million, I think it will be a long time before we find a grape in all respects better adapted to the purpose than the Catawba. When properly cultivated and well ripened it makes a good dry wine, superior to the generality of Rhine wines, and a sparkling wine comparing favorably with the champagnes of France.

For making a cheap red wine to take the place of the clarets of Bordeaux, no grape that has been tried hereabout is equal to the hardy and prolific Norton's Virginia Seedling. For choice fancy wines of a superior grade I would place first the Delaware, the Herbeumont, the Venango or Minor's Seedling, and the Diana, in the order named. Either of these grapes yield a wine for

aroma and delicacy of flavor superior to Catawba, and in my humble judgment equal to Johannisberg, Hermitage, or any of the best wines Europe can produce; but as they have not as yet been tested for extensive vineyard culture, will remain some time in the hands of amateurs only.

Wines made from our native grapes, comprising six or seven distinct botanical species, must necessarily be more diversified than those of Europe. Most of the wine that has been made in this country has been derived from the Labrusca species; all the varieties of which that I have seen possess one peculiar characteristic, being more or less aromatic, varying from the strong-scented fox grape of New England to the most delicate fragrance of the Venango and Diana, giving to the wines made from them a most delightful perfume. This strong and peculiar aromatic quality in all our best American wines will form a distinctive character from the European; and when once familiarized to the palate, I have no doubt will be generally preferred to foreign wines.

There is a common practice in this country, in speaking and writing about native grapes and wines, that seems to me very objectionable, and calculated to detract from their superior merits, that of applying the term foxy to all those highly-flavored varieties which should be characterized as aromatic, and yielding an agreeable perfume, the epithet foxy having a tendency to reduce them to the level of the commonest fox grape, the scent of which by many persons is deemed a disagreeable and vulgar annoyance.

[The above interesting article from Dr. Mosher is in response to a request that he would give us his opinion as to which he considered the best native grapes for the manufacture of wine, a subject which is now attracting a great deal of public attention. We have the opinions of other celebrated wine-makers, which we shall from time to time lay before our readers. There will be found in these communications a great degree of unanimity in awarding to the Delaware the *first* place for a wine of superior grade; in the words of Dr. Mosher, whose opinion we value highly, "equal to Johannisberg, Hermitage, or any of the best wines Europe can produce." The Herbemont would seem to divide with the Diana the *second* place for a wine of similar grade. But we purpose giving a *resume* when the communications are all in. The Doctor, it will be seen, gives to the Catawba the first place as a wine for the million. We would call attention to the Doctor's remarks on the word "foxy." His objections are well taken: it is high time that the word were obsolete.—ED.]

"A SECOND BARNUM."

BY A CLOSE OBSERVER.

SURROUNDED by a cloud of tobacco smoke, sir! strong enough to suffocate any of the fair sex in the metropolis, I sit down, and give vent to my feelings upon a subject that has filled my thoughts for some time; and now, like a bird that has escaped from its cage, gives evidence of its satisfaction by lifting its voice.

Through the never-resting mind of man we see at the present time new discoveries arriving wheresoever we turn our eyes, both in science and art. While some of them are of great benefit, we find many, and by far the greater

part, rest upon principles without any strong foundation. Horticulture is not exempt from this; we see daily new modes of cultivation proposed, and old ones rejected, and different propositions made in regard to the best plan of cultivation, both in the open air and in-doors. While we in some of them discover that the author is well acquainted with the first principles upon which the cultivation of all plants rests, a great many show their deficiency therein, evidencing a want of knowledge of the anatomy and physiology of plants, and also of chemistry. And how can a cultivator grow a crop with success without this knowledge? It is impossible! I think no one can answer this in the negative. This is the basis upon which all his knowledge must rest, and if it is not strong, it will be like a house which has been built upon a heap of sand; the particles of sand being without compactness, the house can not stand, but the first storm will overturn it, and lay it in ruins! Without a true knowledge of physiology, the gardener is unable to do the different operations of trimming, pruning, and propagation with success; all his operations are done in blindness. And thus with regard to chemistry. It is a well-known fact, that plants, when burnt to ashes, present very different compositions in their inorganic matter. Different plants require, therefore, certain mineral substances to be present in the soil, and if not present, they must be supplied with them through artificial means. This difference is of the greatest importance to the practical cultivator to understand, because by understanding what species of plants use the most of one ingredient, he can judge with certainty what substances are wanted in his soil, according to the crop he intends to raise; and if wanted, he will know how to supply those wants, or he can supply his soil with substances, so that he will be able to raise all kinds of plants on it, and thereby avoid exhausting his land.

But it is not my intention to dwell upon this subject exclusively; my wish is only to show, in a few words, the importance of a perfect knowledge of those two sciences, which I think must appear evident to every gardener with a sound judgment. I will, therefore, proceed to the point upon which I wish to make a few remarks.

When seeing something new appear, I generally ask, “What is it?” and if possible, try to get a look at it. This was the case when I read in the HORTICULTURIST for August, that some genius had invented a mode of growing fruit-trees in baskets! Well, sir, I started for the place where this curiosity was to be seen. On arriving there, I was cordially received by the inventor himself, who accompanied me through his green-houses and orchard-houses, which, I must confess, are built in a style superior, in some respects, to many others, though one great mistake has been made in placing the water-tanks in the shade behind the forcing-houses, where the water can not attain a temperature equal to the temperature in the houses. The turtles and frogs, which the writer in the HORTICULTURIST says are kept between the pot-trees, and are found exceedingly useful in devouring numerous insects, I did not have the pleasure of seeing, and concluded, therefore, that they were kept on pasture at this season of the year. A large number of wire-baskets, about six inches in diameter, hung under the rafters, and in them were planted fruit-trees, similar to the way we cultivate *Epiphytes*. I only discovered fruit on one of them, and that was a pear.

I thought already that I had seen what was to be seen with regard to those precious baskets, but when entering the viney, what was my astonish-

ment! here something appeared like magic before my eyes. I felt bewildered, and it was some time before I could believe it to be a reality. It was beautiful, magnificent, and tasteful; truly art had here shown how it is able to improve nature. In a basket about twelve inches in diameter, which hung under a rafter, a grape-vine was growing, and trained with good judgment all around the edge, and six inches from each other, clusters of the Black Hamburg hung with berries equal in size to any grown in graperies. Could this be possible? That such a crop of grapes, and of such good quality, could be raised in a basket whose only contents were a cup filled with charcoal, sand, and water, and placed in the middle of the moss, upon which, the inventor told me, his success depended. Thoughts passed through my mind like a whirlwind; when lo and behold! one of the berries, according to the law of gravitation, dropped to the earth, and, to my great mortification, was smashed to atoms! What could be the cause of this? This led me to take a more scrutinizing glance at the bunches. I discovered the stalks were all dry, and, what was of still greater importance, that said bunches were kept in their position by means of bast! and if this broke, they would follow their predecessor to the earth. That before so beautiful basket disappeared for me behind clouds of disappointment; it seemed to me worthless, and a mere “humbug,” and in its inventor I saw “a second Barnum” appear before me, convinced that Barnum of New York was not the only one in the Union; and if I had gone and seen “What is it? A man or a monkey?” I should have received an answer just as satisfactory.

I returned home, musing to myself, if it was possible to convert fruit-trees, vines included, into *Epiphytes*, and to grow them in baskets filled with moss, into which were placed a cup with charcoal, sand, and water? Before we conclude, it may be worth while to ask ourselves the question, What is the soil? The soil is the main agent to which the plant looks for food; it is the laboratory where the different chemical combinations take place previously to entering the plant, where it is converted into sugar, starch, gum, and the other different secretions of vegetables; and if we deprive the plant of the soil, that is, a fertile soil, whose constituents are the different acids, alkalies, and their combinations, neutral salts, the substances of which are of the greatest importance to vegetation, and think to substitute this through moss, we had better leave nature to care for it, and no doubt the result will be more satisfactory. Secondly, we know that a plant, during the time it is at rest, and no gardening can be done perfectly without the trees being allowed a season of rest, require a less amount of moisture, because the plant being without leaves, and the stem only losing a little by perspiration, the roots take up very little food. In this basket, where the cup is full of water, and into which place the spongiodes, according to the inventor's calculation, are to seek for food, it will be impossible to withhold the water, to a certain degree, because if withheld, the roots, having no soil around them, must involuntarily perish. Furthermore, the roots being surrounded with water during vegetation, the plant will produce only leaves, and ill-formed shoots, and fruit of poor quality, because more aqueous matter is taken into the system, and remains in unaltered condition because it can not be decomposed. And what is the necessity of the farmer draining his land, or the gardener his vine border, or pots, if plants can do without it? If the inventor would place his pedal extremities into a tub of water and remain there for twenty-four hours, I think he would feel similar to his plants, and declare that he was not amphib-

ious. Surely, it is a pity that the inventor did not make his appearance in the world a few generations before ; the gardener would then have been saved the burden of draining and mixing his soil with that precision which scientific men have found useful. I close, hoping that the inventor's discovery may be crowned with success ! What we want are facts !

[At the time we published Dr. Norris's article about Mr. Lawrence's orchard-houses, we were much struck with some of the statements in regard to the peculiar mode of growing fruit-trees in pots and wire-baskets, these pots and baskets being filled with *moss*. About the same time other articles on the same subject appeared, which seemed to us beyond the bounds of reason. We felt sufficiently interested to institute some inquiries ; but while engaged in these, the above article was placed in our hands, and we have delayed printing it for want of room. We have with it a responsible name. Our object in publishing it is to have the matter put right before the public. If only an innocent deception has been practiced, very good ; but Mr. Lawrence owes it to his reputation that his name should no longer be associated with it. We shall be glad to hear any explanations Mr. Chamberlain may have to make. Our correspondent, Dr. Norris, is above all suspicion of being a party to deception of any kind ; his examination, however, seems to have been a hasty one, and he probably had no suspicion that every thing was not just as it should be. We are altogether incredulous that fruit can be grown and matured in baskets of moss, and "An Observer" tells us plainly that the whole thing is a deception. Let us have light.—ED.]

THE DELAWARE GRAPE IN MISSOURI.—NORTON'S VIRGINIA.

BY GEORGE HUSMANN, HERMANN, MO.

I NOTICE in your valuable journal for November, that the war about the origin of this invaluable grape, its productiveness, and adaptability to vine-yard culture, is not yet ended ; and as you seem to wish information about it from all quarters, I thought what little I could say about it *here*, might prove acceptable to your readers.

Two years ago, I obtained a few scions from Mr. Samuel Miller, which I grafted ; and one of them, the only one which lived, made a firm, short-jointed growth of over twelve feet that season. It was grafted on a Catawba vine in the open vineyard, in a rather favorable location. Another graft in our neighborhood (Mr. M. Poeschel's vineyard) also made about the same growth. At the same time I procured a plant, a very small one, and planted it in common soil, without any extra care. The first season it grew but sparingly, but made a fine growth the last very dry summer, and I expect fruit from it next year. It made as good a growth as a Catawba would have done, under the same circumstances. My graft I pruned, in the fall of 1859, to a cane of twelve eyes, and a spur of one eye, and it produced last summer forty-six fine bunches of fruit, while Mr. Poeschel's, under similar treatment, produced, as near as I can recollect, forty-eight bunches, besides making about twenty-five strong layers. The fruit was ripe the first of August, all ripened equally, and was, in my opinion, and the opinion of more than fifty others who tried it here, the best

grape we ever tasted. It may not be as rank a grower as some varieties, but it makes wood enough, and I am so well convinced of its hardiness, that I have left it, and about fifteen other vines which were grafted last spring, entirely unprotected, although I would not lose them for a thousand dollars.

As you seem to wish for information upon certain points, I will take them up in succession, and give you the opinion of all here who have watched its habits with anxious eyes, *not* simply mine, although I heartily concur in them, but of at least twenty of our best grape-growers here.

1. It mildews as little as any other grape known to us. 2. It bears more than we ever saw any other vine bear under the same circumstances. 3. It is one of the hardest vines we ever saw. 4. It is of robust, healthy growth, quite strong enough. 5. It is the best American grape we ever tasted. 6. We think it a native variety, probably produced from seed of the Traminer, from which grape (well known to many of us) it is, however, entirely distinct. To all this we may add, that we consider it eminently adapted to wine-making, and are so confident of its success as a wine grape, that all the wood to be had in this neighborhood will be used to graft on old Catawba vines next spring; besides which a good many plants will be planted here. A small quantity of wine made last fall was so rich, that it could not be weighed by the saccharometer, which only weighs 100°, but was estimated to weigh 115°.

I consider Mr. Thomson, and all who labored to disseminate this grape, as benefactors of the public; and here, as we are on the subject, and Mr. Wm. R. Prince has made similar assertions against me in regard to the value of Norton's Virginia, that he has made against others in regard to the Delaware, I will state that, even if the disseminator of a fruit of *small merit* is a nurseryman, it does not necessarily follow that *self-interest* must be his leading principle. Is Mr. P. perhaps so invulnerable on that point, that he should judge of others? But I will be charitable, and only state the facts, as far as I think the public are interested, as they ought to be enlightened as to the true merit of a fruit or vine, and the reliance they can place upon the assertions of the disseminator, not with any wish of becoming personal toward Mr. Prince. But as this must necessarily involve some leading facts in the history of Norton's Virginia *here*, I will sum them up as briefly as possible.

It was introduced in 1848, as near as I can find out, and planted by a few of our vine-growers; and as Mr. Longworth was then considered the great authority in grape-culture, they made inquiries about it of him, and his answer was extremely unfavorable, as he stated that it would make a harsh, acid, good-for-nothing wine. Still a few cultivated it, as a sort of forlorn hope; and in a few seasons it bore fruit, which, although small, seemed very good, bore plenty of it, and in seasons when Catawba and Isabella failed on account of mildew and rot, this escaped unharmed; and when it was made into wine, it produced an excellent Claret, nearly resembling Port. I became acquainted with it in 1852, and observed it closely for several years; and in 1859, when I was fully satisfied of its merits here, I published the following assertions in the *Valley Farmer*, proposing at the same time to bring in the testimony of more than twenty of our best grape-growers in support of them.

1st. It is as hardy as an oak, having even withstood the terrible winter of '55 and '56 without injury.

2d. It adapts itself to any soil, bearing plentiful crops on the rocky and

steep hillsides, as well as in the deep and rich bottoms of our rivers and creeks.

3d. It starts late in spring, blossoming about a week later than the Catawba, and ripening its fruit a week sooner than that variety, which will make it very valuable in localities subject to late frosts in spring, and early frosts in autumn.

4th. It is never touched by mildew and rot, and will produce, under fair treatment, an average crop of from 300 to 500 gallons of wine per acre.

5th. It makes an excellent dark-colored wine, which, under good treatment, will compare favorably with good Burgundy or Port, (though it has a peculiar, strong flavor of its own,) and which sells very readily at \$2 per gallon, or \$12 per dozen bottles.

6th. It will stand more hard treatment than almost any other variety, as it bears fair crops, even if utterly neglected, though good culture will much improve it.

7th. It is a fine ornamental vine, as its foliage will remain fresh and green until touched by the frost; and a strong grower, whose hardiness fits it extremely well for the covering of arbors.

8th. It is even, when fully ripe, a pleasant eating grape, though it will never be a popular market grape, as the berries are small, but it is very sweet, and many prefer it to the Catawba.

Since then, the two seasons following have only served to prove more fully its great value for our State, and I could bring witnesses by the hundred, (and respectable ones too,) if needed, to prove every iota there said. Yet Mr. Prince asserts, in a letter dated February 3, 1860: "Your culture of Norton's Virginia Grape, provided you could replace it with the Black Guignard or Carter's Favorite, would be the most false economy, and yet we suppose you will not enlighten the public, because it is not *your personal interest* to do so. Such is poor human nature."

So says Mr. Prince, and all this without having seen the grape here, or having investigated this subject. Without even the slightest personal acquaintance with me, he asserts that I am willfully and knowingly misleading the public, because it is *my personal interest* to do so; he does so, although the *facts*, proved here beyond a doubt, stare him in the face; and hundreds of respectable men, men whose statements deserve, charitably speaking, at least as much credit as Mr. Prince's, are ready to testify to them. These are the simple facts; let your readers judge whom they will believe.

Did I not think it of great importance to clear up all this saying and doing about the new grapes, and reduce it to something real and tangible, I would not have taxed your patience and that of your readers to such an extent. If you think it will be acceptable, I will make some notes on about fifty varieties of grapes which I fruited this season, and promise beforehand that I will not be so prosy about them as I have been this time.

[We make no apology for the space recently taken up by this subject; we desire, however, that it should for the present take the form of testimony rather than of controversy. There is such a vast and important interest involved in this question, that we should be justified in devoting all our space to its speedy settlement. We are willing to risk our reputation on the principal points made in our leader of last month. If we can not do our readers any good, we are determined never knowingly to mislead them: they may there-

fore put some confidence in whatever we may say of our personal knowledge. It is thus that we indorse the Delaware grape. In regard to Norton's Virginia, we have grown it for many years. When fully ripe, it is sweet, but it ought not to be thought of for a table grape. Mr. Husmann treats it as a wine grape, and he is not the only one who thinks it has much merit in this respect. We shall be very glad to have your notes on the new grapes.—ED.]

A RURAL RESIDENCE.

BY WM. H. WILLCOX,

Architect and Landscape Gardener, New York.

THE accompanying drawings illustrate a cottage now being erected in Spring Valley, N. Y., for a merchant of this city, and which will be found, upon examination, to combine economy with beauty, and substantial comfort with expressiveness of purpose.

The exigencies of the owner required a roomy house with plenty of sleeping apartments and convenient arrangement.

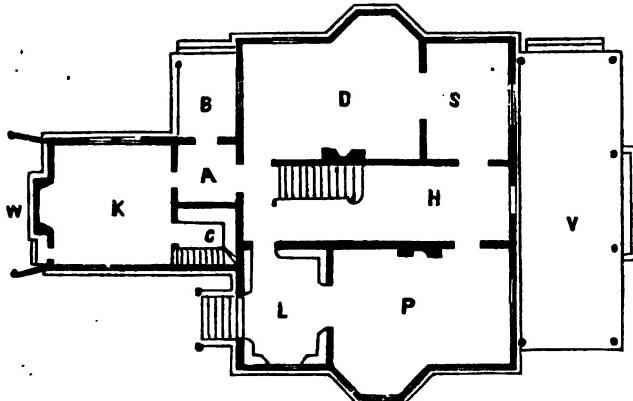


Fig. 2.

Fig. 1 is a Perspective view; Fig. 2, Plan of principal Floor; and Fig. 3, plan of Chamber Floor. The first story is 10 feet high, with a Parlor, Dining Room, Sitting Room, Library, Kitchen, &c. The second story is 9 feet high, and devoted to sleeping apartments. The plans exhibit the dispositions of rooms, which are all of good size, airy, and plainly but substantially and well finished. The exterior, as will be observed, is simple in design, the ornaments being few, and the parts prominent and bold, rather than showy or elaborate in finish. Its site is a prominent one, in a quiet but beautiful valley, without any of those bold jutting parts which give a picturesque tone to the scenery, and that rather suggest a more irregular plan, and much bolder detail than is shown in our design.



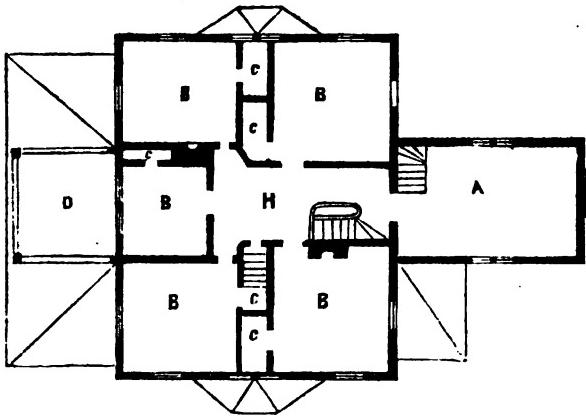


Fig. 2.

The building is now being completed by J. W. Warren, builder. Such a cottage as the foregoing can be erected in a plain manner for \$3,000. In the present instance it will cost, in the most complete manner, with surroundings, \$5,000.

THE DELAWARE IN NEW JERSEY.

BY CHARLES DAVIS, JR., PHILLIPSBURGH.

It is now too late to displace the Delaware grape from that exalted position which it has not undeservedly obtained; the judgment of even a *Prince* can not supersede the voice of the people—and the Delaware is the people's choice.

That any one should now call for testimony to establish the fact that this grape is *hardy* is indeed surprising, but that such testimony should be required by one who has been connected with and interested in horticulture all his life, and whom we should suppose to be well "posted as to the latest intelligence," can be accounted for only on the ground that the want of such evidence would be conducive to "self-interest." Let us propagators be liberal, and give to each variety its *due* merit, even if some one has a newer sort, which (on account of its origin) seems, in his estimation, to excel any and all others. Until we can get hold of the "Eureka," we shall be satisfied with that next best variety, the Delaware.

Having had an opportunity of observing the "Wine Grape," as it is cultivated by the farmers in its native (?) locality, permit us to make a few assertions which are not hasty nor without foundation. The Delaware grape is *hardy*, it is *vigorous*, it is *productive*, it is "*good*," it is "*best*."

There are vines in this neighborhood which are from ten to twenty years old, neglected, uncultivated, unpruned, some of them growing in a tough sod, which looks as if it had not been disturbed for at least half a dozen years, and they pass through our severest winters without any injury.

As regards its vigor, we are not prepared to draw a close comparison with

other sorts generally, for vines under such culture, or rather non-culture, are not fit for the purpose. The Isabella is sometimes found growing under equal disadvantages, and with that variety it will compare very favorably.

That it is usually remarkably productive under such treatment as above-mentioned, we do not assert; nor ought it to be. One vine, however, which had been planted but three or four years *in sod*, produced on one of many canes of last year's growth, about twenty laterals, and, with two or three exceptions, these laterals produced from two to five bunches each. Another vine, which had been pruned for two successive years, was loaded with fine fruit last season.

It is generally, if not universally admitted that the Delaware excels in quality any and all other hardy sorts; we will, therefore, offer but one proof—it is the "Ladies' choice," and it must be "very good" to please them.

The following statement of its history was given me by a grandson of Mr. Paul Provost, at whose homestead the oldest vine known is, I believe, still growing, and though to many it may not be new, as we have never seen it in print, we offer it. The old vine was grown from a cutting brought to Mr. Provost's place by a German who had landed in this country a short time previous, and had spent that time with Mr. Powell of Philadelphia. Whether the German procured this cutting from Mr. Powell's place, or brought it over from the "old country" with him, is uncertain. The opinion is cherished by some that it came from Mr. Powell, and that Mr. P. received it from Mr. Bland of Virginia.

The question naturally arises, If it came from the old country, why can not the same variety be found there now?

That it is a native variety we have no *positive* evidence, nor have we that it is of foreign origin; but that it is adapted to our climate, is vigorous, and of first quality, both as a wine and table grape, we have proof positive, and what more need we? If there are "natural characteristics which serve to determine its place among native or foreign vines," let those who are competent settle this matter immediately. Some there are, we believe, who would not trouble one to rise from the dead, but would be satisfied if the departed spirit would but "communicate" his opinion.

[We could fill a volume with such testimony in favor of the Delaware. We consider the points in regard to its vigor, hardiness, and productiveness as settled. Mr. Davis's statement in regard to the Delaware having been brought from Philadelphia, though not new to us, will be read with interest by most of our readers. We have already, in our leader of last month, referred briefly to the "natural characteristics," but you shall have them in full, Mr. Davis.—Ed.]

GRAFTING THE GRAPE.

BY EL MEDICO.

DURING the last few years a very general and very intense interest appears to have been awakened in the culture and improvement of grapes. From this interest we may very reasonably expect an extraordinary advance in that department of horticulture; an advance which may place us among the most suc-

cessful vine-growing and wine-producing nations. Now, every encouragement should be rendered while this worthy ambition lasts; and I write to give you and your readers my experience in Grape-grafting, a branch of the subject which, I think, stands in especial want of encouragement and elucidation. Encouragement, because, without grafting, the vast majority of those who desire to have the newer and better kinds of grapes, must wait perhaps many years before the price comes down to the limit of their means; and elucidation, because, as I humbly think, there is no department of horticulture so far beyond the skill of the inexperienced, and so generally unsuccessful even in the hands of the professional horticulturist. Most farmers, like myself, have more or less wild vines, or otherwise useless ones, in their gardens, who would be very glad to convert them into some better variety as easily and as successfully, as almost every one can, and is constantly doing with worthless apple and pear-trees. Now, if this could be done, how many thousands of our countrymen would have the pleasure of eating the best kinds of grapes, who are destined, in the present state of ignorance on the subject, to eat fox-grapes or none.

That the grape can be grafted, and with very great success, I know to be the case; but such success belongs to a favored few, and I am not of the number, that is, as yet. And the experience that I am going to give you is of the very worst; and I divulge it only with the hope that it may elicit from yourself, or some other experienced and competent operator, a full and clear article on the subject, which will enable any farmer to graft his grapes as successfully as he grafts his apples. Whoever can, or will, do this, will render a service worth thousands to the agricultural community. For nine persons in ten can procure from neighbors and friends cuttings or scions of fine grapes, who are unable to purchase the rooted plants from the professional dealer.

I, who had long and ardently studied surgery, and practiced it (with success I may say, as I'll not publish my name) on bipeds and quadrupeds, was vain enough to think I could transfer what skill I had from *Animal Surgery* to *Vegetable Surgery*, and have an abundance of good fruit where only worthless wild vines grew before. I must tell the whole story of my failure with some minuteness, so that any competent reader of it may be able to give an "opinion as is an opinion," on the cause of it. I took select cuttings in November last (1859) of wood of the last season's growth. They were packed away carefully in moist sand, and placed in a cellar of an even temperature, dry and cool, but never cold enough to freeze water. When the weather became warm in the following spring, I placed the box in the ice-house to retard vegetation and prevent the possibility of the buds bursting. The scions were well kept, as you will perceive further on. I had studied the "Theory and Practice of Medicine," I mean of Grape-Grafting, so fully that I believe there has been nothing written on the subject in the last five years that I did not have at my tongue's end. And recollecting that most of the writers had *imperiously* urged the importance—the actual necessity—of waiting till the sap had ceased to flow, I determined to obey that direction, if nothing else, in my "capital operations," but in "minor surgery" I performed a few trifling operations, and with trifling success. I'll state them first: it was a little "rajd" into the domain of root-grafting.

On the 1st March I had prepared a very good hot-bed to start vegetables in; and having a few very thrifty young seedling vines (wild,) I determined to

graft Delaware upon six of them, to see how rampantly they would grow when carefully started under glass. They were accordingly cleft-grafted *very* carefully, tied firmly with waxed linen thread, and then wrapped with cotton cloth saturated in the usual grafting wax. The wild roots sent up shoots so frequent and vigorous, that I had not a little trouble in suppressing them. The grafts were put in the stocks, just above the roots, and they (with two eyes) were about half covered with earth. None ever showed the least sign of vegetating, save one, and that seemed to grow so handsomely and fast, that, thinking it needed space, I cut very carefully the wrapper and strings, when, to my surprise, the cleft opened, and the graft fell out. On examination, there was no sign of callus having formed, or of adhesion having taken place! Now, some persons talk of root-grafting the grape in the winter months, and having them to grow many feet the first season, even when grafted on only six inches of old root (*vide "Gardener's Monthly."*) Will some one have the kindness to divulge the secret of such success, and give us the "modus operandi?"

2d "case," (as doctors say.) This "operation" was performed on a wild vine, or rather a vine procured some twelve or thirteen years ago from a nursery, perhaps bearing a grand name, and not to be "sneezed at" then, but only fit to be "sneezed at," or grafted, since the advent of something better. This was on May 22d last, when the vine had made shoots fifteen or twenty inches long, and bearing one or more full-grown leaves. A writer in the HORTICULTURIST (I think 1848) would not let me operate sooner. It was essential that the sap must have ceased to flow. I waited a long time for that condition, but it never came fully, for some of the vines did bleed then profusely, others did not. Some roots of the same vine bled profusely, while others did not. (Pray, by-the-by, is there ever a time when the root or vine will not bleed more or less?) To-day (1st Dec.) I took up some layers, and on cutting them apart I found them to bleed a little, and some of the cut ends were soon covered with a transparent mucilaginous sap. The vine in question was very large and vigorous. Being dug up, and fifteen roots laid bare, of all sizes from half an inch to two inches diameter, they were sawed off, smoothed with a knife, and carefully grafted—most of them cleft-grafted, some saddle-grafted, and some whip-grafted. Most of the roots bled profusely, although the vine, above the surface of the ground, had ceased to bleed for some days previously. The grafts were bound, some with copper wire, being soft and unelastic, some with well-waxed flax thread, and covered with waxed cloth in some cases, and waxed paper in others. They were then covered with earth, all, except the last of the two buds to each graft. All of these grafts vegetated handsomely within less than a week, putting out three or four leaves; and I felt inwardly satisfied that I was one of the most skillful and successful surgeons in the vegetable kingdom. But I didn't think so at the end of two weeks; for by that time all were either *moribund*, or actually dead! These "departed" grafts were carefully screened from the hot sun, and no kindness or attention spared that a humane and solicitous Christian could render.

Case 3d. (From my note-book, May 23d.) Operated upon a large old wild grape-vine, which had never borne any kind of fruit. Cuttings used were Herbemont. The stock was twelve to fifteen inches in circumference at the ground. This was cut up, and some twenty to thirty roots, into which it was divided, were laid bare, so as to admit of easy access in grafting. Had

examined the branches of the vine repeatedly during the last two weeks, so as to be sure not to amputate before the circulation of the blood—the sap rather—had ceased. During the last ten days, on cutting off small twigs, no bleeding ensued. Hence was much surprised to find to-day that several of the roots bled profusely; the sap fell in large and rapid drops from some of the ends, while others bled but little, and a few not at all. Cleft-grafted twenty-one roots; tied the large ones with copper wire, the smaller ones with waxed *cotton* thread; covered some with rags saturated with grafting wax, and some with wax alone. Finally heaped up earth around each so as partially to cover the graft. All put out a few leaves, as in the other cases, and died within two or three weeks, except one, which made about one foot of growth during the season, and was killed by the first frost, much to my satisfaction, as I did not care to have it for a remembrance of bad surgery or ill-luck, as the case may be.

I could tell you of many other attempts made at the same time last spring, and with the same invariable result—some above ground, some just beneath the surface, and in a variety of modes, for I wanted to find out the best! But I need not fatigue you: suffice it to say, the fault could not have been mine; my conscience acquits me of all blame. I have grafted and budded almost every thing but grapes, since early boyhood, and always with the most satisfactory success.

Many otherwise intelligent persons believe that grapes can neither be grafted nor budded; or, if so, always with such indifferent success as not to justify the trouble. This I know, by personal observation, to be altogether erroneous; and that the grape can and is yearly grafted by certain persons with as much success and certainty as the apple or the pear. Shortly after my poor, but I hope instructive effort, I happened in Cincinnati, and attended one of the weekly meetings of the Horticultural Society. On being introduced to Dr. —, one of the leading members, I introduced this subject, and to my inquiry, “Can it be done with success?” his reply was, “I graft more or less of them every year, and with as few failures as I have in grafting apples.” To see, with my own eyes, if such feats were practicable, I went to the vineyard of a famous old German *vigneron* in that neighborhood, and was satisfied that he, at least, could do it. He had cut down apparently several hundred Catawba vines, and grafted them with *Coleman's White*, *Delaware*, *Bullitt*, and other famous new kinds, with almost invariable success. He thinks he did not lose more than four in a hundred. I counted nearly a hundred in one row without observing a single failure. This was in September last; the grafts had been put in in the spring, and had already made a growth varying from five to twenty-five feet, on very thin land. His method was cleft-grafting, an inch beneath the surface, tying with common unwaxed twine, covering with an inch of fine earth, and trusting to the *vis medicatrix naturæ*; for his operation appeared simple, rude, and careless. My ill success, he thought, was owing to my using wax, and taking too much pains! Others have accounted for it in different ways, as lateness of season, uncongeniality between the wild and cultivated vine, &c.

My own opinion is, that I operated too late in the season, though many writers say, if the cuttings are kept back, it can be done as well in one month as another, even as late as August. The mere lateness did not cause the failure, but the heat of the weather attending always that season (23d May) of the year. Although the germination of seeds and buds will take place at a

very high temperature, a very low one, say 40° F., seems to be the natural and proper temperature. At that, cuttings of hardy plants will form *callus* in cellars, or the ground, and seeds of grasses and the cereals will sprout as long as the contained nutriment lasts. *Vegetation*, or growth, (the formation of wood, the next stage,) needs a little higher temperature, say 60 to 70° F. *Fructification*, or formation and ripening of fruits, the last stage of vegetable growth, needs a still higher temperature, say from 80° to 110°, as during the day in autumn. Now, my grafts *germinated* in a high temperature, but failed to go on to the second stage, *vegetation*, or growth, as I conceive, owing to the too high temperature of the weather. This is my theory; and if it be correct, it shows the impropriety of putting off grafting the grape to wait for the cessation of the flow of sap. My design is to act on the truth of my theory next spring, and to disregard altogether the flow of sap, as does the successful old German grafter to whom I have alluded above.

Now, if any reader of the HORTICULTURIST possesses experience and practical knowledge on this important subject, he would perform a general and valuable service to the public by imparting what he may know, at an early day, through the HORTICULTURIST, so that all such as mean to try their hands at grape-grafting in the coming spring, may do so with sufficient lights to guide them to useful results.

[A very interesting “chapter of failures.” There are some important points, however, which you have not heeded, Doctor. The “diagnosis” of your cases, therefore, is necessarily imperfect, and a favorable “prognosis” can not safely be ventured upon until you supply “the missing points” of your “clinique.” If your scions were properly prepared and inserted, we can not account for so many failures. The grape is usually grafted under glass, and is then a tolerably successful operation. It can also be done in the open air with reasonable success. But the best way to help you and others in like troubles, would be to give an illustrated article, describing minutely the conditions necessary to success. This you may expect. Your German friend thinks you took *too* much pains; we do not. There is a great fallacy in all such broad assertions. He had performed the operation so repeatedly, that he had acquired the skill to do it rapidly and *just right*, without any apparent pains; whereas you, lacking the skill acquired by long practice, performed the operation much less perfectly, though taking infinitely more pains; your “patients” were killed through kindness. But do not despair, Doctor; we will furnish you some new “subjects” for practice, and shall be disappointed if, with your ambition, you do not yet achieve a distinguished position in the department of “Vegetable Surgery.”—Ed.]

“LANDSCAPE ADORNMENT.”—NO. VII.

BY GEORGE E. WOODWARD,

Civil and Landscape Engineer, No. 29 Broadway, New York.

“The faculty of foreknowing effects constitutes the master in every branch of the polite arts.”
—Humphrey Repton.

We are led to assume that a true and full knowledge of art is one of the

essential requirements to high development of landscape beauty. We may without it reach a tolerable degree of success; a success, however, which can not be appreciated by a refined and cultivated taste. So long as we accept inferior works of art, a display of second-rate skill, the imperfect execution of those who do not know that there is a standard far beyond their education or abilities, just so long will we have an unsatisfactory production, and one that decreases in pleasure in the same proportion as our education in true art progresses.

There is another requisite in landscape adornment equally essential to success, and that is a thorough knowledge of construction; construction with conditions of a different character than those which usually mark the works of a civil engineer. There must be a refined taste united to the exquisite beauty of grade and alignment; the beautiful must blend with the practical. An imperfect knowledge or a smatter of civil engineering would be of no avail to him who aims high in landscape art. It is not enough to know little of that science; it is little enough to know all of its inexhaustible resources: they will never fail to unfold the hidden and unsuspected truths and beauties that are never noticed by an unprofessional eye, and he who discards its aid in carriage drives, walks, bridges, culverts, ornamental water, drainage, earthwork, &c., &c., discards a principle in rural economy and a perfection in finish and elegance that the home-made and expensive manner of execution can never approach. The capabilities of a place will be overlooked or undeveloped by the pretender, while talent and ability will uncover a mine of gold or of beauty. The man of taste will discover a new value in real estate, while those who have lived on it all their days can only regret the lack of that knowledge by which a new-comer readily commands a hundred per cent. advance on the price they accepted. The eye of an artist or an engineer will see further along the pathway of science and beauty, and readily perceive both the apparent and concealed resources that belong to or go to make up the real merits of value or pleasure.

A different branch of construction, that of architecture, lapping over and appropriating a portion of the artist's and engineer's professions, is also necessary to successful practice in landscape improvement. A certain degree of folly may ignore its application, but art in construction we deem important to study. The draughtsman's art need not be enlarged on here. No profession in design or construction can rise above mediocrity without a thorough knowledge of its principles: by it the fleeting thoughts of beauty are fixed, the plan of construction studied, and the principles of execution imparted. Success in landscape adornment can not be reached without its aid, any more than the artist, the architect, or the civil engineer can hope to be successful by casting aside the plans by which they study out the finished excellences of their great and enduring works.

There should be, we think, a distinction as well as a difference made in the execution of landscape work. There is one form of construction by the hand of man, a matter of science and skill, a certain foretold positive result. There is another form of construction in which the design of the artist can only be worked out by the silent changes of time:

"Harsh and cold the builder's work appears,
Till softened down by long revolving years."

There is the preparation of the canvas, and then the production of the picture;

a development of beauty in the high walks of art; and he who does not understand its appliances, as well as the habits and future development of the materials he deals with, will fall far short of true excellence. It is not to plant or cut down a tree; the gardener or wood-chopper can do that: but which and where to cut and plant will indicate the taste that designs, or the mind that controls.

A broad, bold, false statement is that made by those who know little or nothing of landscape art, when they say its execution can not be represented by plans, the details of an artist's fancy not communicated; or, in other words, that landscape gardening must necessarily be a constant change; that digging, dumping, and planting must be carried on experimentally until the desired effect be produced; that landscape effects exist in such brains that can only discover and seize them when they make themselves apparent in the process of construction: those who have gold enough to gild thickly their broad acres may listen to such specious ignorance. The artist who can not illustrate his conceptions, show the effects he desires, and the manner of their production, ceases to be an artist. The architect or civil engineer who can not give the working drawings and lay out any form of construction, is deficient in the higher walks of his profession. That mind which is not large and broad enough, or of sufficient grasp to design a plan of improvement that can be carried out in all its minor details and accessories, betrays a lack of knowledge and ability in both departments of design and construction.

If the arts of design enable us to detail in advance the studied realizations of the artist, the sculptor, and the architect, are they not equally applicable to the art of landscape gardening? or, treating landscape gardening exclusively as a fine art, must we reason that during the execution of a work of art, its beauties and effects disclose themselves unexpectedly? or, rather, state the positive fact that in such a blind method of procedure nothing beautiful or effective is disclosed, the more than tenfold ignorance existing on art in landscape adornment finding a sad realization in a disappointment only equaled by a wasteful and miserable expenditure?

We shall make the aesthetics of gardening the subject of a future article. This trade has by its followers been laboriously foisted on public notice as the basis of all the principles of the elegant art of landscape adornment, the lamentable results of which can not but be apparent to all those amateurs who have cut their expensive eye-teeth in its demonstrations.

[We watch the progress of Mr. Woodward's articles with much interest. He by no means claims too high a place for his beautiful profession. The art of Landscape Adornment is a Fine Art in the best sense of the term; conception and execution are alike essential to its true manifestation, and we are glad to perceive that Mr. Woodward so treats it.—ED.]

A "DOSE" OF DELAWARE GRAPE ONCE MORE.

BY J. B. GARNER, COLUMBIA, PA.

I DID not intend to obtrude my thoughts again on the pages of the HORTICULTURIST, as I very well know the great majority of its readers care very little,

be it native or foreign. All they care to know is, Is it good? is it hardy? and does it succeed well without extra care?

These questions, however, it is needless for me to answer, as that has been done time and again from all sections of our country.

In reply to your "Buffalonian" correspondent, however, it seems meet that I should say a few words. He admits "that it appears the fact is established, that the Delaware grape was *not* found in a wild state in the localities *visited by him*, (me,) but still does not see the impossibility of its originating *somewhere* in the country!" I am perfectly willing to concede that it originated *somewhere!* that its place of origin, however, was not *any where* on "Uncle Sam's potato patch!" but that, in company with many others, it was brought across the "big pond!" If it *had* originated any where in the section of country where the advocates of its nativism so positively asserted "that they could show us at least twenty places where it was growing wild, as truly aboriginal as the rocks around it," why can't they show us at least *one wild vine*? I think we have already fully proved that such is *not the fact*. Then it remains for those who call it a native—a *Labrusca*, forsooth!—if they could do so, to show us where that *somewhere* is, where it grows wild. That, they will say, "is more than they bargained for!" So with the following remarks we drop the subject, at least till some more palpable proof of its nativism is brought forth than has yet appeared, or some new "mare's nest" is discovered where it was hatched!

Your humorous "incog." correspondent has no objection to me "dosing him with Delaware grapes *ad libitum*; the discussion of the subject on paper being somewhat less juicy," (dry as parchment,) "I shall not give him (me) the same liberty, but reserve the privilege of crying enough if I (he) see occasion." Hold on, MacDuff, and—!

Well, the best I can do under the circumstances is to say, if you, Mr. Editor, and *unknown* friend, will give me a call next September, I think I can promise you both a real old-fashioned allopathic "dose" of Delaware grapes, and a few others intermixed, for the sake of variety—and to prevent griping!

It is an old and trite saying, "that to convince a man against his will, he is of the same opinion still," which is truly verified by the many remarks published in relation to this grape.

In your "note" to my article in the September number, you, Mr. Editor, call on me "to trace the Delaware to a time antecedent to the advent of any American grapes superior to Alexander." This I can easily do to the satisfaction of my own mind, but may not be so convincing to others.

A gentleman of undoubted veracity, and who has made extensive inquiries along the Delaware River, writes me that "There are persons yet living in Bucks County, Pennsylvania, who knew the Delaware grape in 1823!" This was several years anterior to the advent of either Catawba or Isabella. In the year 1823, Mr. John Adlum, of Washington, published "A Memoir on the Cultivation of the Vine in America," and does not even mention either Catawba or Isabella, though he gives a list of grapes in his vineyard at Georgetown, of twenty-two varieties, native and foreign; and yet Mr. Adlum is the person who first introduced into cultivation the Catawba! About the same time, or soon after, which must have been from the year 1825 to 1828, Mr. Prince, of Flushing, first advertised the Isabella.

A correspondent from Bucks County, Pennsylvania, writes me, "I feel sorry that Mr. —— made that mistake in 'Gardener's Monthly.' The Delaware, or,

as it is called here, the 'Ruff,' or the 'French wine grape,' is not a native grape; it is a true foreigner. Mr. Provost, of Frenchtown, New Jersey, imported it among a lot of other foreign grapes." My correspondent further says, "A Mr. Bergstrasser of New Jersey, who was a great fruit man, got the Delaware grape from Mr. Canoa, of New Jersey, and Mr. Canoa got it of Mr. Provost, and all the Delaware vines that are in the northern part of Bucks County came from the late Mr. Bergstrasser of New Jersey, who spread it extensively; but he had no name for it except the *French wine grape*, because Mr. Provost was a Frenchman. Then a Mr. Ruff also brought it from New Jersey, and having no name for it, people called it the 'Ruff grape,'" &c.

These authorities, if they prove any thing, certainly go pretty far toward *making out a clear case!* That the Delaware and the Ruff are identical, I have the proof before me, growing side by side; and that all the vines of this variety came originally from Mr. Provost's garden seems clear, he being a Frenchman, and known to import vines from France; and that the Delaware is one of them appears equally clear; and that so early as 1820 or 1823, it could not well have *originated* and borne fruit in his garden, and been scattered over New Jersey and Bucks County, Pennsylvania, either as a cross between native and foreign, nor yet as a true seedling of a foreign kind, because, as we stated before, "persons are yet living who knew it in 1823!" Indeed, it is doubtful if Mr. Provost would plant *any* native grape, at least until by sad experience most of his foreign vines failed.

I have no more interest in proving it a foreign grape than my worthy opponent says he has in proving it a native grape, and am quite as anxious as he, or any other person can be, "*to claim all the good things for America!*" Still I am always willing "to render unto Cæsar the things which are Cæsar's," &c.

I think, Mr. Editor, you will concede that we have now traced the Delaware grape "to a time antecedent to the advent of any American grape superior to the Alexander," and also that it can be neither an American seedling, nor yet a cross between native and foreign, but a true *imported Vitis vinifera*.

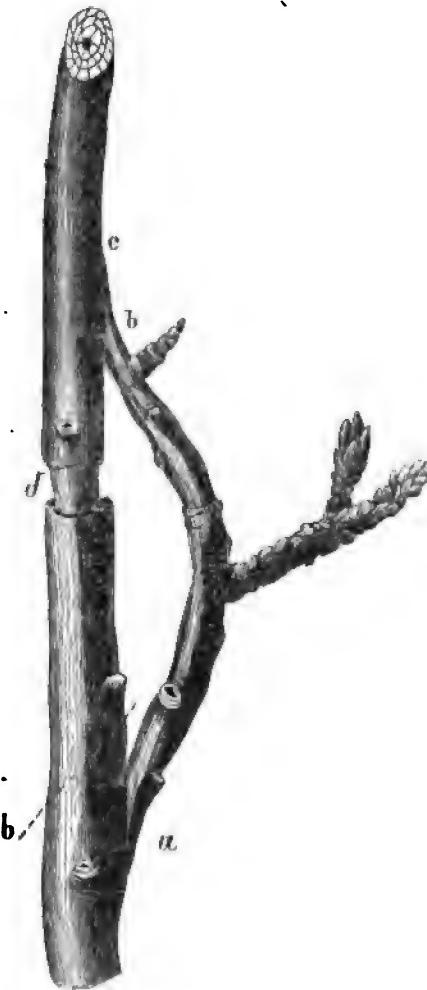
[We agree with you, Doctor, that the questions in regard to the quality, hardiness, and productiveness of the Delaware have been pretty well answered from all sections of the country, and we hope all are now satisfied on these points; but do you not see what the settlement of these three questions involves? We leave "A Buffalonian" to take care of himself; but we want to be on hand when the "dosing" with Delaware grapes comes off; "and to prevent griping"—of course something of that kind will be good; we understand, and will come. We do not think you have proved your point, Doctor; for it is easy to trace the Isabella back to 1810 at least, and we think we can go back of 1822 for the Catawba. We are sifting the testimony, and you and the rest of our readers shall soon have the benefit of our investigations in that quarter. We do not, however, now lay any special stress on this point, aside from its historical interest, as we think the question must be mainly decided by internal evidence alone. We are somewhat distrustful of that kind of testimony which runs back by decades, of which we can give you some amusing examples. But possess yourself in patience, and we shall soon have this whole question settled, one way or the other. It can not, however, be done in a "note."—Ed.]

FRUIT BUD GRAFTING.

BY D. L. ADAIR, HAWESVILLE, KENTUCKY.

In the March number of the *Horticulturist* for 1859, are several articles on spur and fruit bud grafting, which I studied attentively, and attempted to follow the directions there given by Mr. Charles Battel, of Troyes, France, and also the *graffe mixte*, as described in the London *Gardener's Chronicle*; but I failed in both instances to get the scions to grow. It may have been that I misunderstood the directions; but this year I have made an alteration in the mode, and have succeeded admirably. Believing it to be an improvement, I send you the drawing, which fully explains the mode. Take scions 5 or 6 inches long, with the fruit buds or spurs on them; pare the ends down thin with a slanting cut on one side only. The stock on which it is to be inserted is cut through the bark in the form of a T, and the lower end of the scion is pushed in as the bud is budding, as shown at a. Opposite the upper end of the scion another cut is made in the form of an inverted L; the scion is bent, and the upper end pushed under the bark, as shown at c, and both ends are then secured with matting or candle-wick; then a ring of bark from $\frac{1}{4}$ to $\frac{1}{2}$ inch long is taken out, as at d, which completes the operation.

My plan, I think, has several advantages over those described in the articles referred to. *First*, in connecting both ends of the scion with the stock, securing a circulation of the sap through the scion, and thereby avoiding with more certainty the forming of branches out of the fruit spurs or buds by a too vigorous flow of sap. *Second*, it enables us to use a longer scion, with more buds on it. A scion a foot or more in length could be used as well as a shorter one. *Third*, the ringing of the stock throws the flow of sap through the scion, by interrupting it down the stock. There



is no danger of killing the scion by the ringing, as in one season the bark will close over the ring, even should the graft fail to take. The operation is performed at the usual time of budding.

I find it unnecessary to use grafting wax or clay, as is absolutely necessary by the French mode. Such tying as is used for budding in the ordinary method is sufficient.

After the first year's growth, the stock and scion may be cut off at the dotted lines *b b*, and the graft permitted to form a limb.

[The above method of grafting is a novel and, we should think, a certain one. The process is similar to the one used on the grape by Mr. Corneilson of Philadelphia, as he described it to us at the last meeting of the American Pomological Society. We are inclined to question its durability on the vine, however, but should like to know that it had been thoroughly tried. On the pear and other fruit-trees we should think the union would be firm and permanent. Mr. Adair's experience would seem to be altogether in favor of it. Experiments like these are always interesting, and sometimes very useful.—ED.]

THE CUYAHOGA GRAPE.

(See *Frontispiece*.)

BY THE EDITOR.

We have selected this fine new grape as a *Frontispiece* to our January number; the plates, fortunately, were beyond the reach of the fire. It is the best executed lithograph of a grape that we have yet seen, and does our artist great credit. Its history, as far as we can learn it, is as follows: Mr. Wemple, some ten years since, saw a seedling grape vine, a few inches high, coming up between the steps of a store in the town of Euclid, took it up, and carried it home. Afterward parting with his farm, he carried a layer of the grape to his present residence in Collamer, Cuyahoga Co., Ohio, whence its name.

The Cuyahoga, we think, will prove a valuable addition to our list of hardy table grapes. The bunch figured in our frontispiece is of medium size, but the size of both the bunch and the berry will increase as the vines acquire age. The time of ripening we judge to be about ten days earlier than the Isabella; it is said to be fully two weeks earlier. If this be so, its value will be greatly enhanced. It is also said that it is free from rot, that it ripens its fruit uniformly, and that the berries hang well on the bunch. At present there is but one full-grown vine, and a friend who saw this when out West, assures us that it is productive.

The following is our description: *Bunch*, medium to large, shouldered, compact; (will be larger than our specimen in matured vines.) *Berries*, medium to large, round, covered with bloom. *Pulp*, melting, juicy, sweet, with a fine musky flavor. *Color*, pale yellowish green, tinged with amber when fully ripe. *Quality*, best.

It has a trace of what is called the native aroma, but not offensively so even to the fastidious, but when fully matured, like the specimens last sent us, it is delicately spicy, and free from pungency and acidity. We have had a vine of it for a year past, and found it a vigorous grower, with short-jointed wood and leaves of much substance, closely resembling the Isabella, of which we

think it is a seedling. The color of the fruit does not militate against this view, since many undoubted seedlings from the Isabella produce green-colored fruit. We may as well state here, that it is our purpose to discard the use of the word *white* as applied to grapes that are *green*. There can be no good excuse for such a perversion of words; we can describe grapes that are *not* black without such an impropriety.

THE DELAWARE GRAPE—A REJOINDER TO MR. PRINCE.

BY A. THOMSON, DELAWARE, OHIO.

I RECIPROCATE the expressions of personal regard with which Mr. Prince prefacing his reply to my article in the November number of the HORTICULTURIST. My relations with him, since the date of our first acquaintance, have been those of personal friendship. There is no necessity, in the discussion of questions such as are at issue between us, for indulging in personal vituperation, and I have no disposition to do so. I impute to him no *intentional* misrepresentations in reference to the Delaware grape, or my position in relation to the vine itself, and collateral questions growing out of the present discussion. I think, however, I can safely affirm that he is a gentleman of pretty strong prejudices; positive in the assertion and maintenance of his opinions; exceedingly reluctant to give them up or acknowledge an error of judgment or fact; and, withal, peculiarly liable to be *mistaken*, and to *forget*, in vindicating a *present* theory, what were those he *formerly* advocated. My object, in this communication, is to point out some of his errors; show the inconsistency of his *present* with his *past* professions; and vindicate myself against reflections that can not but be regarded as personal and any thing but complimentary, though probably not intended to be offensive.

Mr. P. does not regard me as "sustaining the point he has assailed." That is, I suppose, he does not understand me as *insisting* that the Delaware is, *beyond all doubt*, an indigenous variety. My first impressions, founded on the hasty conclusions of those I supposed competent to judge, were that it was probably a foreign variety. Investigation soon satisfied me that it was not *the* foreign variety it was claimed to be. All subsequent observation, and the almost unanimous testimony of those acknowledged to be authority on such points, together with the fact that, up to the present time, it has not been identified with any known foreign variety, have forced me to the conclusion that *it must be a native*; and for the last seven years such has been my opinion, though I have not sought to obtrude it upon the public. But *this* is not the important point in controversy. Whether it *is* or *is not* a native, is of no manner of consequence, if it meets all the requirements as to hardiness, &c., that could be expected of a native. This is the question in the decision of which horticulturists and the public at large are interested. That it possesses these qualities Mr. P. denies. He assumes that it *is* a foreign variety: all experience proves that in our climate such vines, without a single known exception, are not suited to out-door culture; and *all the characteristics* which render them thus *worthless* he *attributes to the Delaware* in their broadest sense. *This is the point* Mr. P. makes. On this point I join issue with him, and at the same time respectfully dissent from his assumption that I coincide with him on the other, or at least do not oppose it.

To argue at this day that the Delaware possesses all the characteristics of a native variety, as regards hardiness, productiveness, adaptation to exposed culture, &c., or that it is a first-class fruit, indeed *the* grape of the country, would almost be equivalent to casting an imputation upon the intelligence and judgment of the American horticultural public. The testimony on these points is so overwhelmingly in the affirmative that no summing up is necessary. Take the number of the *HORTICULTURIST* in which the last communication from the pen of Mr. P. appears. Read the fair and candid article of the editor; the report of the Cincinnati Horticultural Society, signed by such men as Robert Buchanan, Dr. Mosier, and J. E. Mottier; the reported proceedings of the Fruit Growers' Society of Western New York, with the testimony of P. Barry, H. E. Hooker, Mr. Ellwanger, and other competent and honest fruit growers. How do these gentlemen testify? and how does their evidence comport with the position of Mr. Prince? Or, if this will not suffice, go outside the pages of the *HORTICULTURIST*, and (to say nothing of the vast accumulations of testimony in its favor the last few years have adduced, embracing the opinions of nearly every prominent horticulturist in the country) note the recent corroborating evidence that every where abounds. See sagacious vintners planting it by the hundred, and preparing to do so by the thousand; observe the awards at fruit committees, at horticultural and agricultural exhibitions; hear the testimony borne by competent judges as to the superior quality of the wine it produces; read the report of the Wine Growers' Association of Missouri, which on the 7th of September last unanimously resolved, "That it is our opinion, from what we have seen, that when the Delaware has been sufficiently tried, it will be found to be *the best table, market, and wine grape in America*;" peruse the flattering encomiums of the horticultural press of the country, and the conclusion must be irresistible that Mr. P. has taken upon himself a herculean task when he essays an effort to *write it down* in public esteem. To assign it an inferior position among grapes, he will find will require something more than the mere *ipse dixit* of even so distinguished a horticulturist as he is acknowledged to be, and that, too, were he not, as happens to be the case, so strong a witness against himself.

Mr. P. admits the force of the extract from his letter of November, 1855, but pleads it is not fair to quote it against him, as the opinion there so positively expressed was the result of an error in confounding the Ramsdell (a New England Fox grape) with the Delaware, and his conclusions were arrived at from watching the developments of that variety under the supposition that it was the Delaware. This, certainly, is making a plausible showing; and, were he correct in his statement and recollection, the explanation should be received by all fair-minded persons as perfectly satisfactory, and release him from responsibility for an opinion founded on erroneous premises. But, unfortunately for our friend, he is entirely mistaken in regard to this matter, and his beautiful structure falls to the ground because it has no foundation to sustain it. The language quoted was not the result of an error in confounding the Ramsdell and the Delaware. The letter quoted from was written in the fall of 1855, and Mr. P. never received a single vine of or through me till the spring of 1856; and the only additional lot received of me (and those through which the alleged error arose) I purchased for and forwarded to him in the fall of 1857; two years AFTER the letter from which I quoted was written. But I shall not permit this point to be determined by a mere assertion, though the record proves its correctness. Mr. P. complains that I have not quoted from some

of his letters. To maintain my position and refute his, it is not necessary to draw upon all his epistles; but to gratify him I will venture upon an additional quotation or two. In a letter dated June 10, 1859, he takes me to task for having, as he alleged, sent him, in the fall of 1857, one dozen vines purporting to be Delaware, which had proved spurious. How the error referred to occurred, is explained in his last article. In that letter, in endeavoring to rebut my positive denial that spurious vines had reached him through me, he says: "The specimen vine from you and the one I had layered all have *entire leaves*, and all from Dr. Grant and others have *divided leaves*," and continues: "Let me know whether your vines have divided leaves. *Both vines are TRUE NATIVES, in spite of what my friend Dr. J. B. Garber says to the contrary.*" Thus it will be seen, that no longer ago than June, 1859, Mr. Prince was as well satisfied that the Delaware is a "*true native*" as he was in November, 1855, when he declared he did not "*think*" it was, but "*knew*" it to be such. This extract, I think it will be admitted, totally upsets his pretense that he was led to err in judgment and express an erroneous opinion in consequence of confounding the Delaware and the Ramsdell. His first positive assertion, that he *knew* it to be a native, *was not* the result of the error referred to, because the error did not occur till *two years after* the assertion was made; and had it really been so, the more recent and equally positive declaration that both the Delaware and the Ramsdell "*are true natives*" would dispose of the first and conclusively settle that point. Our friend is clearly at fault as regards this matter; the facts are against him, hence his position is utterly untenable; and the best and only consistent course left for him to pursue is to gracefully back down, acknowledge his error, and, if he still deems it prudent or profitable to adhere to his present position of antagonism to the Delaware, find some other explanation than the one offered for the inconsistency of his conduct.

Mr. P. is any thing but tolerant toward those who declare their belief that the Delaware is an indigenous vine. In a letter dated February 6, 1860, he says: "If any man is to be found so bold as to take the simple primary position that the Delaware possesses the various characteristics of an indigenous grape, which I believe no one has yet fully dared to do—although it forms the actual starting point—he would by this one act prove himself to be utterly ignorant and most remarkably stupid." And again, in a letter dated September 18, 1860: "If I had a child that could not distinguish quickly its foreign origin, I would not bring him up." I leave it for Mr. P. to reconcile these declarations with those quoted, and will simply remark, that had the same rule in bringing up children been applied to him that he proposes applying to his children, he (W. R. P.) would now, if engaged in demolishing the Delaware, have to transmit his hostile missives from spirit-land rather than invite them on this mundane sphere.

When Mr. P. was in Delaware, after returning from our visit to Mr. Campbell's garden, I introduced him to Hon. C. Sweetser, in front of the hotel, within half an hour of the departure of the train on which he left, and went to my office. I was not aware, till he so stated in his article, that he embraced that brief interval to visit the garden of Mr. S. This garden is the most thoroughly protected of any in the place, there being high brick walls on the west, north, and east sides. Mr. S. had at the time but a single Delaware vine on his premises, and that but a small one, hardly large enough to have fruit, and Mr. Prince saw *no vine of any kind in that garden that was not protected by being trained against a south or east brick wall.* His visit to this garden,

therefore, does not in the least aid him in making out his case, or conflict with or weaken any statement made in my first article.

The point as to whether he saw *one* or *three* vines at Mr. Campbell's, trained against the south and north walls of his house, and which were in fruit at the time, is of little importance. If it were of any consequence, a personal examination, or the testimony of Mr. C., or of his lady, who in his absence picked the fruit for us, if called for, would show there are *three* vines—*two* on the south side, *one* on the west. Such is the case now—such was the state of affairs then.

The intimation by Mr. P., that I have named a "*foreign vine*" the "*Dela-ware*, in order to impress the public with the belief that it originated" here, is wholly gratuitous, and entirely uncalled for, and, I am constrained to add, unworthy any gentleman as well informed on that point as he *must* be. It demands notice at my hands, and none the less so because of its being accompanied by a professed disclaimer of intended offense. In introducing the Delaware to notice before the *Ohio Pomological Society*, in the fall of 1851; in an article published in the *Ohio Cultivator* in 1852; in a communication in the *HORTICULTURIST* for November, 1855; and in a letter to the editor of *Hovey's Magazine of Horticulture*, and published in the number of that work for November, 1855; and, I believe, in all my subsequent communications, I stated clearly and explicitly WHERE the vine came from, and HOW it got here. I never wrote a line or uttered a sentence to mortal man that would warrant even an inference that I supposed it originated here. All this is pure and unadulterated fiction, utterly void of foundation in fact. Neither did I name it "*Delaware*," as intimated. It was brought to notice here, had no name, and all efforts to have its identity fixed having been unsuccessful, it acquired the appellation complained of by common consent and usage, in reference to the place from which it was disseminated, without any agency of mine, or that of any other particular person, so far as my knowledge extends.

It is not "notorious," nor is it even *true*, that "Joseph Heath, living just out of town, brought the first vine there [here] from Bordentown." It is, however, *true*, that RICHARD WARFORD, living some six miles from town, in the year 1841, brought from Frenchtown, N. J., for his neighbor, BENJAMIN HEATH, the first two vines, one of which Mr. W. received for his trouble, and the other was planted by Mr. Heath. Both are still flourishing, though growing in a thoroughly exposed situation; and from these two vines originated all the genuine "*Delawares*" that have been disseminated from this locality. These are notorious facts—matters of record, with which intelligent horticulturists are familiar, and I should not have again adverted to them but for the ungenerous innuendoes indulged in by Mr. P.

I have recently been informed that a distinguished Cincinnati horticulturist has had a number of Delaware seedlings fruit, and the result is such an unmistakable tendency toward the Fox grape as to pretty clearly indicate a close relationship to that family. This would certainly indicate native origin; and facts that have come under my own observation are strongly corroborative. Two years since I purchased of Mr. Heath two seedling vines, which he assured me were beyond the possibility of mistake from the seed of the Delaware. It was in the fall after the foliage had fallen, and the wood had a very close resemblance to that of the Delaware. Neither has yet fruited, but though clearly distinct from each other, the leaves of each are decidedly foxy. If the Delaware is, as Mr. P. and those who agree with him contend, really an

exotic variety, why is it they can not tell *what* foreign variety it is? It is a fruit that certainly would be deemed worthy of "a local habitation and a name" in any country; and hence there should be no difficulty in fixing its identity; and to do so is clearly incumbent on these gentlemen. I believe I am not mistaken in saying that Mr. P. now claims it is the Traminer. If so, it has certainly undergone a remarkable change since it left its native country, and it is strange and unaccountable that recent importations do not show any aptitude for a similar metamorphosis, but persistently follow in the wake of all other foreign vines thus far tested. The position of Mr. P. is beset with numerous and formidable difficulties, which must be overcome before he can hope to make much headway in his present undertaking. Not one of those difficulties has he yet succeeded in disposing of; they all still stare him squarely in the face, and most effectually block up his pathway.

[Mr. Thomson has presented his points so clearly and comprehensively, that Mr. Prince will now have no difficulty in comprehending the precise issue between himself and Mr. T. This will save a great deal of unnecessary circumlocution.—ED.]

THE VERBENA.

BY JAMES PENTLAND, BALTIMORE, MARYLAND.

ARE we dependent upon the Europeans for all of our best Verbenas? I answer, emphatically, No. Notwithstanding, it is a notorious fact that nothing will command a good price in our market, unless it has a "European opinion" stamped upon it. Why is it so? Are we not capable of judging of the merits of a flower without having it sent to England, to be there judged, and have their stamp put upon it, before we can introduce it to the public as worthy of their notice? or are we such "humbugs" that the public are afraid to trust us when we recommend a "bantling" of our own to their favor? or is not John Bull aware that we are a gullible people, and that he can sell us any thing that has a good name attached to it, with a Lord this, or Duke that, or Lady somebody? for they have plenty such names, and can beat all creation in high-sounding, aristocratic names for their seedling plants, which they are anxious to dispose of at good prices to Brother Jonathan, their neighbor across the "big pond."

But I am wandering from the subject: the digression was caused by remembering a remark made to me by an eminent florist in a sister city, in speaking of new plants. Said he, "There are really very few buyers till an article is indorsed by European opinion." What a humiliating fact! Since then I have fully proved the truth of his remark from my own observation But to return. Take up a catalogue of any of our growers of the Verbena, and run your eye over the list of names, (which is legion,) and you will be surprised at the comparatively few that have an American sound; almost every thing has a foreign name, either French or English. Again, notice the heading, "All the latest *novelties* of England imported direct." What are the "novelties?" The names of them, I am sorry to say, with the major part, are the only merit they possess. I don't mean to say that we have not some few that possess real merit, such, for instance, as *Geant des Batailles*

and General Simpson, (which I consider the criterion for a good Verbena;) then there is Leviathan, Mrs. Woodruff, Mrs. Holford, Eleanoir, Celestial, and some few other old varieties that I could name, that are really distinct and good, and that withstand our variable climate and burning sun; but is it not a notorious fact that more than two thirds of the imported Verbenas are not worth growing with us? True, there are many that in the spring, growing in a pot, are really splendid; but, sir, plant them in the border, and what are they? really nothing. The first hot sun scorches the flowers, and they give no satisfaction during the whole summer, but toward autumn, if perchance they live, there may be a few good blooms; and before we get another look at them the frost has destroyed them.

Now what is a Verbena for, but to ornament our borders and give us a succession of its beautiful flowers? and to be really good, it must be a good and constant bloomer, a good grower, (and bear in mind there are many good growers and bad bloomers,) and one that will throw its blooms above the foliage of the plant, and that will not fade when the sun shines upon it for the first time; and such, you know, is not the case with 90 per cent. of all the great "novelties" introduced every year from the Continent; in fact, I very much doubt if there has been any improvement made upon any of the continental varieties since the time those first named were introduced, if we except those with prominent eyes, (of which Leviathan and Eleanoir are the best,) and very many of those when exposed to our sun lose that distinctive feature. What I contend for is this, that we must grow our own Verbenas, in order to have them sufficiently hardy to withstand our hot and dry climate; and this has in a great measure been attained by many of our most successful cultivators of this beautiful plant.

In looking over the report of the exhibition of the Pennsylvania Horticultural Society, in the *Gardener's Monthly* for October, on page 318 I find the following: "Mr. Dreer's seedling Verbenas were decidedly good, though not superior to other kinds." Now I would like to know what "other kinds" were alluded to; were they foreign kinds or American seedlings? I did not have the pleasure of seeing those on exhibition, but I did see a lot of seedling Verbenas growing and blooming upon the grounds of Mr. Dreer, that struck me as "decidedly good" and superior to most of the foreign varieties with which I am acquainted. They were one mass of bloom at the time I saw them, (Sept. 15th or 18th,) and his foreman informed me that they had so been during the whole summer. There were some eighteen or twenty of them, and I think I counted a dozen or more "decidedly distinct and superior;" they nearly all had very prominent eyes, and seemed to stand the sun well; and I have no doubt, if he sends them out named, that they will become great and deserved favorites; for you know that a Verbena does not always show its best qualities the first year.

What a justly favorite and popular plant the Verbena is, and yet how few grow them properly in order to bring out their good qualities. To grow them in perfection requires a very deep and rich soil, and one that will retain moisture; it is also a plant that does not succeed well grown two seasons in the same soil; and planted a third year in the same soil they will scarcely grow at all, but you will constantly see them dying out. Very many wonder at the cause; for when they pull the plant up, they find the roots all eaten away. The mischief is done by a small, dark-colored aphis, with which every

Verbena bed is more or less affected the second year. This is the experience of all in this section of country.

I once recommended a lady, who grows Verbenas upon a large scale for the purpose of ornamenting her grounds, (and who had almost despaired of ever having them in perfection again,) who complained about her Verbenas dying out so much every year, to apply a heavy coat of tobacco stems, as an experiment. She did so, without any apparent effect. The only sure remedy is, to dig out the old soil and replace it with new, prepared for the purpose by mixing one third well rotted manure with turf laid up during the winter; and my word for it, you will have good blooms the whole summer.

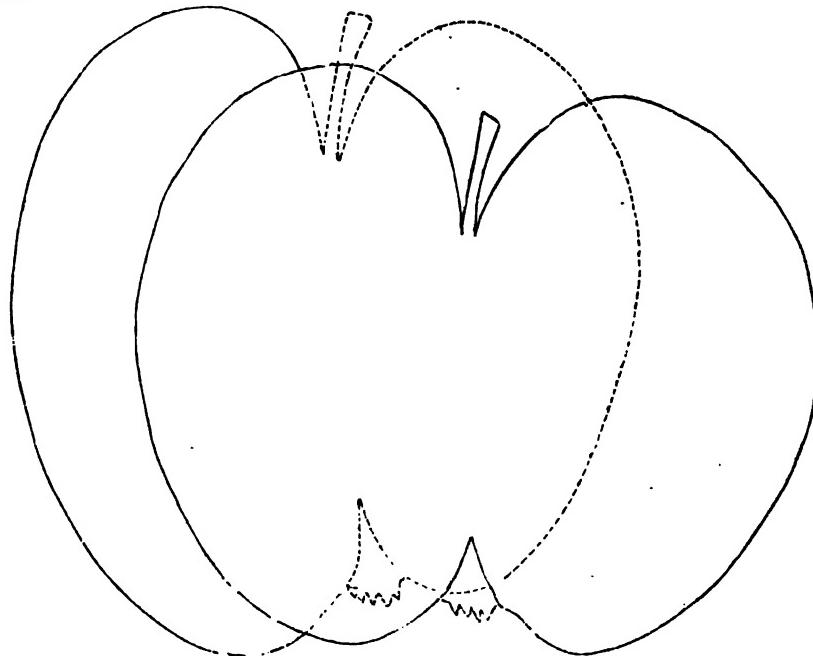
But I fear I have trespassed upon your valuable space by the great length of this rambling article, but I must say that if our Verbena list was reduced to about one third the number now named, we would still have many duplicates left; but let us select those that are known to be good, without regard to their being *old varieties*, for, after all, many of them are the best for all the purposes for which Verbenas have become so essential.

[There is a good deal of truth in what is said above in regard to "foreign names:" we are not yet sufficiently Americanized, horticulturally, to appreciate fully the merits of our own productions. A few years since, an American seedling dahlia was offered for sale at 50 cents a plant, but it did not take. A high-sounding foreign name was afterward given to it, and the price raised; and hundreds who saw no beauty in it at 50 cents, esteemed it a splendid flower at *three dollars!* The best Verbena that we saw during the past season was *Mrs. Cyrus W. Field*, an American seedling; and we do not hesitate to say, that the best Verbenas and Petunias now grown are American seedlings. So much for a name.—ED.]

NEW YORK PIPPIN AND OTHER APPLES.

BY CHARLES DOWNING, NEWBURGH, N. Y.

MR. EDITOR:—Having heard much, during the past year or two, from various persons at the West and Southwest, of the New York Pippin, and wishing to learn something of its qualities, &c., I wrote to Thos. S. Kennedy, Esq., of Louisville, for specimens, which he kindly sent me, as also Carolina and several other varieties, with a request that I would give a description of them in the HORTICULTURIST. Some contend that the New York Pippin and the Carolina are the same, while others claim them to be distinct, as the specimens sent me show. The New York Pippin I do not recognize. Its origin is unknown, as far as I can learn; it is thought by some western pomologists to have been introduced there from New York State, and I think some one at the American Pomological meeting in Philadelphia (September, 1860,) said it was brought to Louisville from Philadelphia many years since. All agree in its being a hardy, vigorous, very productive, and very salable and profitable market variety, and also valuable for all culinary purposes; but no one seems to speak highly of it as a first quality dessert fruit. Mr. Kennedy says it matures at Louisville in December and January; but in central Illinois, Mr. Phoenix informs me, it keeps till April and May. Can any one tell us the origin and history of this apple?



NEW YORK PIPPIN.

NEW YORK PIPPIN.—Baltimore Red, of southern Illinois.

Baltimore Red Streak, of southern Illinois.

Victoria Red, of some parts of Missouri.

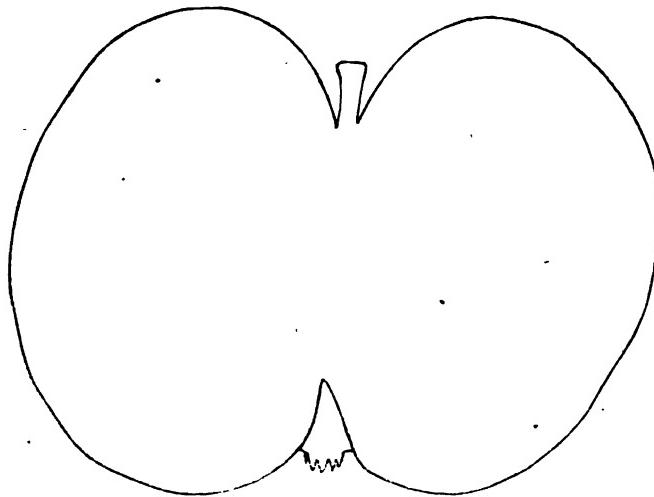
Kentucky Pippin, of southwestern Kentucky.

Red Pippin, in some sections of Illinois.

Fruit large, variable in form, (judging from the dozen specimens sent,) truncate conic, a little oblique, sometimes cylindric, scarcely angular, sometimes sides unequal, light in weight. Skin somewhat waxen, whitish yellow, much shaded with crimson, and considerably splashed and striped with carmine, and moderately sprinkled with gray dots. Stalk short and small, in a rather large, deep cavity, often with light russet, which sometimes extends in rays on the base. Calyx closed, segments short, in a large, rather deep, slightly corrugated basin. Flesh white, a little coarse, rather tender, moderately juicy, with a pleasant subacid flavor. Quality "good."

CAROLINA.—This is no doubt Nickajack, which is an old apple, and has many synonyms, which are given below. Mr. Kennedy says: "The Carolina matures for use in March, April, and May, according to season, and is of a hard, firm flesh, spicy flavor; skin thick, rather sweet, and is only prized for its long keeping qualities, showy appearance, and market value. It is a tree of most magnificent proportions, of an upright spreading growth, and very vigorous. It towers many feet above the Fall Pippin, while the branches spread out in a larger circumference." The young wood of Carolina is reddish white; the New York Pippin is very dark, and a strong, upright grower.

Fruit large, oblate conic, considerably depressed, slightly angular, oblique,



CAROLINA.

often irregular. Skin yellow, shaded, striped, and splashed with crimson and carmine over the whole surface, sometimes having a grayish appearance, as if covered with a thin bloom, and thickly covered with conspicuous large light dots, having a dark center. Stalk short, in a rather large but not very deep cavity. Calyx closed, or partially open, in a medium, slightly corrugated basin, sometimes smooth. Flesh yellowish, compact, (a heavy fruit,) not very tender, moderately juicy, with an undecided subacid flavor. Core small and compact. Quality "good," may be "very good," (the fruit not being sufficiently ripe to decide correctly.)

Synonyms of Nickajack, as given me from various persons in Georgia, North Carolina, Alabama, etc.:

| | |
|-------------------------------------|-------------------------------------|
| Nickajack. | Howard. |
| Summerour, the original name. | Dahlenega. |
| Berry. | Big Hill. |
| Red Warrior, (erroneously.) | Allegany. |
| Wall. | Ruckman, or Winter Rose, of N. C. |
| do. | Carolina Spice. |
| Wonder. | Chaltram Pippin, of North Carolina. |
| do. | Cheatan Pippin, of Alabama. |
| Pound. | Hubbard. |
| Accidental, of Alabama. | Gowdie. |
| Aberdeen, of Miss. | Mobbs. |
| Red Pippin, or Jackson Red, of Ala. | |
| Teanham. | |
| Rickman's Red. | |

RED WINTER SWEET.—Unknown to me. Medium size, varying in form, generally comic. Skin almost entirely covered with deep crimson on a yellow ground, sometimes indistinct splashes and stripes, and moderately sprinkled with large light dots around the base, and more numerous and small light dots

around calyx. Stalk very short, cavity small, calyx small and closed, in a very shallow basin. Flesh yellow, a little coarse, not very tender or juicy, but with a rich, honeyed, sweet flavor, slightly aromatic. Probably an excellent sort for culinary purposes. Mr. Kennedy says: "A good and prolific bearer, a delicious, rich, high-flavored, sweet apple. We have never seen it out of this locality, yet it came from Virginia or Maryland some forty years since." Can any one from those states give the origin and history of this apple?

WINTER QUEEN.—This is also said to have numerous synonyms; an old, well-known fruit at the South. Flesh yellowish, crisp, tender, very juicy, with a sprightly subacid flavor. "Very good," at least.

LARGE STRIPED WINTER PEARMAIN.—Originated in Kentucky. A large, handsome fruit tree, a vigorous grower, very productive; keeps well, and is highly prized at the South and West generally.

PRYOR'S RED.—Fine specimens, and an excellent fruit for most localities in the South and West, but has not, thus far, succeeded well at the North.

[Came in just at the right moment to help us out of the fire, for which please accept our thanks. Is it not preposterous that the Nickajack (or any other apple) should have such a "string" of synonyms? We hope somebody will respond to Mr. Downing's queries.—ED.]

RESTORATION OF OLD VINES IN THE GRAPERY.

BY WILLIAM BRIGHT, PHILADELPHIA.

I BEG leave to call the attention of the horticultural community to a very important article published in the *Gardener's Chronicle*, England, Nov. 24th, on the best means of restoring the vigor of old canes in the viney, which, after having been for five or six years strong and prolific, have gradually lost their fruiting capacity, and become weak and worthless. The article referred to is published under the horticultural head, and is probably from the pen of Dr. Lindley, as it is published as editorial with his sanction. That many old canes of fine size and appearance, when worked on the spur system, do become weak and worthless in a few years, and cease to increase in size, is well known. What is the cause?

Dr. Lindley says the cause of the decline of these old canes is to be found in the fact, that having reached the top of the house, and being consequently checked in their growth for several years, they have no longer sufficient foliage to elaborate the sap necessary to cover the immense old rod and roots with a layer of new wood annually, as they should do, and at the same time to carry off a crop of grapes. Hence weak shoots on the spurs, and small bunches of badly ripened fruit, are the inevitable results.

What is the remedy? Dr. Lindley says, simply *cut down the old vines as close to the border as it can properly be done, and grow up a new cane.*

Permit me, Mr. Editor, to stick a pin there, and ask particular attention to this new and remarkable step in grape culture, and to the sound vegetable physiology upon which it is based. I have not the article at hand, and will not attempt to state the reasoning of Dr. Lindley. I think the whole article should be published in the *HORTICULTURIST*. I only wish now to say that

the new practice advocated by Dr. Lindley brings the whole management of grape vines right down to my Renewal System, and shows conclusively that my system is one which is sustained by the highest scientific opinion in the world.

Dr. Lindley says, cut down your old vines as soon as they decline in vigor and fruiting capacity, and grow a new cane from the base of the old stem. My system proposes to cut the vines down after every fruiting season, *before they are exhausted*, and grow a new rod for the next season. I do not doubt that you may work the vines on the spur system for two or three years, gradually increasing the length of the cane each year, till you reach to the top of the rafter, without serious injury to them; but I think it will be found better practice to grow wood one year and fruit the next, and to cut the vines down every other year, rather than to cripple them by the usual method of management.

Now let me ask, if you may cut down vines, six to ten years old, not only without danger, but with positive benefit, why may we not cut down vines every other year, as I have proposed, with equal safety?

I feel quite sure that I am right in my renewal system, and I shall stick to it, with a perseverance as constant and resistless as "the tug of gravitation," till somebody can prove by facts and good scientific argument that I am wrong.

[We had noticed the article referred to, and will hereafter give its main points, with remarks of our own. We are too much in a "heap" from our late burning to do so now.—ED.]



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

"GOING THROUGH THE FIRE."—We now have a lively sense of the meaning of this expression. On the 19th of December, the HORTICULTURIST was consumed at the large fire in Frankfort Street. When we say that nothing was left but the editor and the publisher, we state pretty nearly the exact truth. Our printed sheets, engravings, copy, rules, every thing, in short, except proofs of two or three articles for the January number, were utterly consumed. This is our apology for the late appearance of the present number. We must ask the indulgence of our readers and correspondents; their sympathy we feel sure of. We set to work again the next morning in good earnest, on *nothing*, and have worked hard ever since, and trust that we shall not be much behind. To our friends and correspondents, who replied promptly to our appeal, we return our hearty thanks. The responses of all did not come in time to be available for the present number, as it was indispensable to push it through without delay. We have done the best we could under the circumstances, and trust the present issue will not be found devoid of interest.

This calamity has made *our* year to consist of thirteen months instead of twelve; it has also given us an opportunity of testing the sincerity of our friends. They have borne the test handsomely, and we are content. Much miscellaneous matter, notices of Horticultural Societies, and some very interesting correspondence—some of which had lain over a month for want of room—have been consumed. Will such of our correspondents as have not heard from us, and whose letters, etc., do not appear in the present number, do us the kindness to write again? We have written to all that we could remember; but, in the confusion, not a few may have been forgotten. The loss of our publishers is not exactly known yet. The loss of Mr. Jenkins, our printer, will reach fully \$50,000. We extend to him our warmest sympathy, with the earnest wish that he may soon find himself in a position to resume business. To our readers, we extend the compliments of the season, with a *thrice happy New Year*.

"A FRIEND IN NEED."—Such has been, emphatically, Mr. Alvord, who is now printing our magazine. He came forward in the handsomest manner, and placed at our disposal his type and presses, and all the facilities of his office. In accepting them, as we did, we felt that he had placed us under obligations which we could never forget. May he prosper in all the great duties of life, and never feel the need of a friend. He occupies a "big" place in our affections; (he weighs about 240.)

YALE COLLEGE LECTURES.—As announced in our last, this course will open on February 5th, and we again bespeak for it the attention of our readers. It is an experiment which, if successful, will be instrumental in diffusing a large amount of useful knowledge. The programme, so far as we have learned, will be somewhat as follows: The *first* week will be devoted to Horticulture, and the following are the lecturers thus far engaged: M. P. Wilder, on American Pomology; P.

Barry, on Transplanting, Pruning, Packing, and Preserving Fruit; C. W. Grant, on the Grape; S. B. Parsons, on Ornamental and Exotic Gardening; Thomas Hogg, on Propagation; R. G. Pardee, either on City Gardening or Small Fruits; P. B. Mead, on the Pear; G. R. Emerson, on Forest Trees; and others whose names we have not learned. Besides these, other eminent Horticulturists will be present, and take part in the discussions. The second week will be devoted to the Relations of Science to Agriculture and Horticulture. The third week will be occupied with Agriculture proper. The fourth week will be devoted to Domestic Animals, during which a course of four lectures will be given on the Subjugation and Education of the Horse, accompanied by demonstrations upon the living animal. The names of the gentlemen who will take part in these last lectures have not been furnished us; but these and other particulars may be learned by addressing Prof. John A. Porter, New Haven.

PATENT OFFICE REPORT.—We are indebted to Hon. J. Humphrey for the Report of the Commissioner of Patents for 1859, (Agriculture,) which we shall examine shortly.

PROGRESSIVE GARDENERS' SOCIETY OF PHILADELPHIA.—We are indebted to Secretary Scott for advanced sheets of the printed proceedings of this Society. We are glad to learn that they are to be put in a permanent form. They will make an octavo pamphlet of about 116 pages, embracing Essays, Discussions, and other valuable horticultural information. It will be sold to non-members for 25 cents per copy, for the benefit of the Society's library and reading-room, and we hope will have a good sale. It will be ready about January 1st.

CINCINNATI GRAPE REPORT.—In the body of this report, as received by us last month, it was stated that the Committee had *eight* reasons for preferring the Delaware, but only *seven* were enumerated, and we altered the word *eight* accordingly. We find, however, in the report printed in the *Cincinnatus*, that eight reasons are enumerated, the missing one being the fifth, which reads: "It is not damaged by mildew."

THE FIRE AT FLUSHING.—We burned the Messrs. Parsons last month pretty badly, but on what we thought reliable authority. We know how it feels now, and very cheerfully take off a *cipher* from our sum of last month; \$500 we conceive to be quite enough for them to bear in these hard times. They lost some of their new plants, but the damage was not so great as we had been told.

MULTUM IN PARVO.—One of our subscribers, Mr. George Hayward, of Brooklyn, has been reading and doing to some purpose. He writes us as follows: "I have raised this year, upon nine feet square, in my lot at the back of the house, as follows: three and a quarter pecks of onions gathered for winter, besides using a good many green with lettuce; one hundred and fifty heads of good cabbage lettuce; twelve heads of cabbage, and a second crop of greens from the same; eighteen good-sized cucumbers; a good supply of turnip radishes, both spring and fall; half a bushel of strap-leaved turnips." That shows what can be done.

OUR ARTISTS.—This being the season of compliments, we embrace the occasion to pay a well-merited one to our artists. We think we are warranted in saying, that our engravings for the past year will compare favorably, in point of artistic execution, with those of any magazine in the country, not even excepting *Harpers' Monthly*. They have been executed by young ladies of decided taste and talent, who will yet make themselves a name in their profession. Miss Whiston has done the transferring, and Miss Fuller the engraving. They are both graduates of the Ladies' School of Design connected with the Cooper Institute. We are fully satisfied with what they

have done for us; and this acknowledgment is only a simple act of justice. We hope it may also be an encouragement to them to excel still further in their profession. Our fruit and flower pieces have been painted by Mr. Hochstein, and we consider him, in his particular line, one of the best artists in the country. His pieces are often marred in being colored on the lithograph, but the originals are finely done. The Cuyahoga grape, for instance, which Mr. Hochstein drew on the stone, is one of the best grape pieces that we have yet seen; but our colorist has injured a number of copies by adding a tinge of blue which is not in the original. With two thousand more subscribers to the colored edition, it would be an object to color every plate by hand. We hope to do so yet, and bid defiance to criticism. Mr. Haasis, our colorist, has a difficult task to perform, but he is painstaking and clever, and seldom gives cause for complaint; he can not, like the others, touch his work over again when once done. Mr. Hayward, our lithographist, is equal to any demand we can make upon him, and tries to get every thing just right. On the whole, we are much pleased with our artists, and wish them well.

OUR EXCHANGES.—We had taken occasion of the new year to say a friendly word of our "exchanges;" but what we intended as a "free-will offering" has been turned into an "offering of fire." We shall endeavor to find time to do it over again next month.

THE RURAL NEW-YORKER.—Brother Moore is a decided wag; he sometimes does a good thing. His last consists in trying to make the people believe that they don't know that he publishes one of the best weeklies in the world. The fact is, they know that better than he does himself; if they don't, they are living in greater ignorance than we supposed; and the best thing they can do is to send on \$2 at once, and get the *Rural*. They will never regret it.

PRIZE REPORTING.—At the last Fair of the American Institute, Henry S. Olcott, Esq., of New York, was presented with a handsome silver cup for the best public report of the Fair. A similar prize was offered lately by the United States Agricultural Society, and was awarded to Mr. Olcott. Having read his reports, we venture to say that both cups were well deserved.

A BROTHERLY ACT.—As soon as the editor and publisher of the *Gardener's Monthly* heard of our misfortune, they made a prompt tender of their personal services, and all the facilities of their office, for which we tried to thank them in suitable terms. We can only now make a brief record of the act, and place it away in our heart.

DOUBLE ZINNIAS.—The French have at last succeeded in producing double flowers of the Zinnia, of various colors, which are pronounced by Dr. Lindley to be large, and very double and beautiful. Some of our enterprising seedsmen will no doubt soon have the seed for sale.

BOTANICAL SOCIETY OF CANADA.—At a meeting held in the Chemistry class-room of Queen's College, Kingston, the BOTANICAL SOCIETY OF CANADA was duly inaugurated. Among those who took a leading part in the exercises were the Rev. Principal Leitch, D.D., of Queen's College; Mr. Drummond, of the Montreal Bank; Professors Williamson, Wier, Mowat, Stewart, Yates, and Lawson; Mr. May, B.A., Queen's College School; Dr. Yates, Dr. Dupuis, Odessa, C. W.; Mr. Thibodo, Mr. Skinner, Mr. Ferguson, and many other distinguished citizens.

The Rev. Dr. Leitch was called to the chair, and announced the object of the meeting in a very interesting address. He was followed by Professor Lawson, who, in an able and clear manner, pointed out the great and interesting objects which might be accomplished by the Society, taking occasion, during his remarks, to pay a well-deserved compliment to our own countrymen, Professors Gray and Torrey. Professor Litchfield followed, with some practical suggestions in regard to the formation of a Botanical Garden, etc. Professor Mowat reported a draft of laws for the

government of the Society, which was adopted. The first relates to the object of the Society, which is the advancement of botanical science in all its departments, structural, physiological, systematic, and geographical; and the application of botany to the useful and ornamental arts, etc. The second relates to members, of which there are four classes: honorary members, fellows, annual subscribers, and corresponding members. The third relates to the election of honorary members, the number of which is limited to twenty-four: six in Britain; four in Canada; four in other colonial possessions; four in the United States; and six in other foreign countries. The fourth relates to the election of fellows. The fifth relates to annual subscribers; any person may become an annual subscriber on the payment of two dollars. Lady subscribers are also provided for. The sixth relates to corresponding members, from whom no payment is required. The seventh relates to fines and penalties. The eighth relates to the Council, which consists of a president, two vice-presidents, twelve councillors, a secretary, a treasurer, four curators, and a librarian. The ninth and last relates to local secretaries.

A committee was appointed to nominate officers for election at the next meeting. A committee was also appointed to prepare rules for regulating the exchange of specimens among members, the distribution of seeds, etc. Another committee was appointed to consider the propriety of printing a catalogue of Canadian plants, etc. Still another committee was appointed to nominate foreign botanists, and others, suitable for election as honorary and corresponding members. These committees having been appointed, about one hundred gentlemen came forward and gave in their names as members. A vote of thanks was then passed to the chairman, Rev. Dr. Leitch; after which the members retired to the laboratory, where tea was served, and some time passed in examining books of plates, microscopical preparations, etc., etc. The next meeting will be held on the 11th of January for the election of officers, etc.; on which occasion scientific papers will be read by Professors Blackie and Lawson, Dr. Dupuis, Dr. Lindsay, and others.

We trust the Society thus founded will grow into fair proportions, and be the means of diffusing stores of useful knowledge in the peculiar sphere of its operations.

FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.—The annual meeting of this Society will be held in the Court House, Rochester, on Wednesday, January 9th, at 11 o'clock A.M. The proceedings are usually very interesting, and we shall be enabled to lay them before our readers.

FRUIT GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.—The next meeting of this Society will be held, if we remember rightly, at Reading, Pa., on the first Wednesday in February, 1861. Will some friend there send us an account of the proceedings?

OHIO POMOLOGICAL SOCIETY.—The next meeting of this Society will be held at Cincinnati on the 16th and 17th of January, in the room of the Horticultural Society, corner of Sixth and Walnut Streets. Packages of fruit may be sent to S. W. Hazeltine and Co., Walnut Street, Cincinnati. They have the men and the material, and ought to say and do something worthy of record.

THE EDGECOMBE FARM JOURNAL.—This is a new monthly folio of eight pages, published at Tarboro', N. C., at fifty cents a year. William B. Smith & Co., Editors. It is well made up, and gives promise of being a useful journal. The price, however, is too small.

HORTICULTURAL SOCIETIES.—Our matter relating to these Societies, some of which had been laid over for a month, has gone with every thing else. We remember having notices of the American Institute, Progressive Gardeners' Society, Yonkers Horticultural Society, Hartford Horticultural Society, Genesee Valley Society, and several others. We should be glad to replace them if we could.

DEATH OF SAMUEL WALKER.—We have been pained to learn the death of this eminent pomologist, whom we have known intimately for many years. The following address, before the Massachusetts Horticultural Society, by the Hon. Marshall P. Wilder, will make the reader familiar with some of the leading incidents of Mr. Walker's life:

"Mr. President,—But a few months since I stood before you to announce the death of one of our oldest and most respectable members. And now an inscrutable and all-wise Providence calls me to make known to this Society the afflictive dispensation which has removed from us another of our shining lights, and again thrown the mantle of sorrow around us.

"I allude, sir, to the demise of the Hon. Samuel Walker, who died at his residence in Roxbury on the evening of Tuesday last, and whose precious remains were borne by us, yesterday, to his favorite Auburn, and there committed to the bosom of his mother earth—'earth to earth, ashes to ashes, dust to dust'—a spot which was ever dear to him, and which will forever be hallowed in our affections.

"Mr. Walker was one of the earliest and most influential members of this Society. For nearly thirty years he has been deeply interested in its objects, and ardently devoted to its welfare. Among the offices which he held were those of treasurer, vice-president, and president; and during this long period his name has annually been associated with us in some official capacity.

"He was of foreign birth, but was truly American and national in his feelings. He was one of the founders of the National Pomological Society, for many years a vice-president, and at the time of his death the chairman of the General Fruit Committee of that association. He also held offices of honor and trust in his own city and county, and in the commonwealth.

"Mr. Walker was in most respects a model man. In perception, quick and accurate; in taste intuitive and refined; in manners, unassuming, courteous, and polite; in duty, conscientious, faithful, judicious; in life, earnest, exemplary, and practical. As a friend and companion, he was genial, sympathetic, and confiding. His heart was full of love to others, and often have I heard him remark, 'he that would have friends must prove himself friendly.'

"Few men have taken so lively an interest in the prosperity of our institutions, and few have been more constant at our business meetings. Who does not remember his cordial greeting, his suavity of address, and his cheerful smile? Methinks I see his very form as he was wont to stand at this table; I hear his gentle and persuasive voice encouraging us to rise higher and higher in the scale of human excellence, and to make stronger and stronger the bonds of friendship and peace which unite us together. But no, Mr. President: he is dead! he is gone! We shall no more feel the warm grasp of his friendly hand! He will no more greet us with cordial salutation! We shall no more listen to his wise counsels and friendly teachings! His mortal has put on immortality! His pure spirit has ascended to those celestial fields, where 'he shall be like a tree planted by the rivers of water,' that bringeth forth his fruit in his season: his leaf also shall not wither."

"Time will not permit me to enumerate the many virtues of our deceased friend, or to speak of his public services in other departments of life. In a word, he was universally esteemed and respected. None knew him but to love him, and those who knew him best, loved him the most. With these desultory thoughts, the impulse of the moment, permit me to offer the resolutions which have been prepared for the occasion:

"Resolved, That the Massachusetts Horticultural Society have learned with profound sorrow and regret of the decease of the Hon. Samuel Walker, one of its earliest, most active, and influential members, who for more than thirty years has labored with zeal, energy, and well-timed exertions to promote its welfare.

"Resolved, That in his death this Society and the country have lost one of the standard-bearers of American horticulture, and that we will ever hold in grateful remembrance his valuable services and his private worth, and will cherish his memory as a public benefactor.

"Resolved, That while this bereavement will be long and deeply deplored far beyond the circle of his family, we tender to them our sympathy and affection in this hour of their deep affliction.

"Resolved, That the Secretary be requested to transmit to the family of the deceased a copy of the above resolutions, and that they be copied in the papers of the day."

The resolutions were unanimously adopted, and the Society immediately adjourned.

BOOKS AND CATALOGUES RECEIVED.

Descriptive Catalogue of Southern and Acclimated Fruit Trees, Evergreens, Roses, Grape Vines, Rare Trees, Shrubs, etc., cultivated and for sale at the Pomaria Nurseries. Address Wm. Summer, Pomaria, S. C. Columbia Agents: Dr. C. H. Miot and Robert M. Stokes. Charleston Agents: Messrs. Ingraham and Webb. Fernandina (Fla.) Agents: Messrs. Roux & Co.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Green-house Plants, Perennials, Bulbous Roots, etc., cultivated and for sale by James Mattison, at the Jacksonville Nurseries, Jacksonville, Tompkins Co., N. Y. 1860-1.

Illustrated and Descriptive Catalogue of hardy Native Grape Vines, Shrubs, Roses, and Herbaceous Plants, Raspberries, Blackberries, Strawberries, Currants, etc., cultivated and for sale at the New England Nursery, Bridgeport, Conn. William Perry & Son, Proprietors. 1860 and 1861.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, etc., cultivated and for sale at the Covedale Nurseries, Cleveland, Ohio. Dr. Edward Taylor, Proprietor.

Catalogue of Fruit and Ornamental Trees, Shrubs, Flowers, etc., cultivated and for sale at the Southern Michigan Nurseries, on Chicago Street, Coldwater, Michigan. G. H. White & Co., Proprietors.

Bridgeman's Descriptive Catalogues, Nos. 1 and 2, combined. No. 1, Flower Seeds. No. 2, Vegetable Seeds, etc. With Practical Directions for their Culture and Treatment. For sale at Bridgeman's Horticultural Establishment, 876 and 878 Broadway, New York. Nursery and Green-houses, Astoria, L. I.—A truly handsome and valuable catalogue.

The Rural Annual and Horticultural Directory for 1861. Rochester: Joseph Harris, Office of the *Genesee Farmer*.—A very useful little hand-book.

Proceedings of the Southern Vine Growers' Convention, held at Aiken, S. C., on the 21st and 22d of August, 1860.—We have marked some interesting passages for publication.

Lectures on Agricultural Chemistry, delivered at the Smithsonian Institute, December, 1859, by Professor Samuel H. Johnson, of Yale College, Conn.—Just what we should have expected from the Professor: sound, comprehensive, and practical.

Constitution and By-Laws of the Cobourg Horticultural Society.—Also embraces a report of the Society's operations for the first year, leaving a balance on the right side. We wish them abundant success.

An Address delivered before the Queen's County Agricultural Society, at their Nineteenth Annual Exhibition, at Jamaica, Long Island, September 19, 1860, by Major M. R. Patrick, President of the New York State Agricultural College, Ovid, Seneca Co., N. Y.—An able and interesting address, to which we shall recur again.

Plantation and Farm Instruction, Regulation, Record, Inventory, and Account Book, for the Use of Managers of Estates, and for the better Ordering and Management of Plantation and Farm Business in every particular. By a Southern Planter. Second edition. Published by J. W. Randolph, 121 Main Street, Richmond, Va., 1861.—Well arranged and much needed.

The Farmers' Journal and Transactions of the Board of Agriculture of Lower Canada. November and December, 1860.—Contains much useful and valuable matter, worthy of better paper and ink.

Proceedings of the Missouri Fruit Growers' Association for 1859, and the Proceedings of the Annual Meeting for 1860; to which is appended, An Essay on Grape Culture, by George Husmann, of Hermann, Mo.—Contains much important information, especially for our western friends.

The Illinois Teacher: devoted to Education, Science, and Free Schools. Published monthly by N. C. Nason, Peoria, Illinois.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, and Plants, cultivated and for sale at the Hermann Nursery, Hermann, Mo. Hermann & Manwaring, Proprietors.

An Address, delivered November 10, 1860, by Madison S. Frierson, Esq., to the Maury County Horticultural Society, at Hamner's Hall, Columbia, Tenn. Published by request of the Society.—A manly, and, in many respects, model address, which the members should have printed on better paper. We learn from the address, that the Society, though only a year old, has already a good library, one of the best features of any Society. The least the members can do is to co-operate heartily with such a president.

Small Fruits, Ornamental Trees, Shrubs, Grape Vines, etc., for sale by Dr. Holmes, Nurseryman, Youngstown, N. Y.

Correspondence.

HARMONIZING INFLUENCE OF HORTICULTURE.—*Mr. Editor*,—In these times of partisan strife and disorder it is pleasant to call to mind the peaceful and harmonizing influence of horticultural pursuits. The recent national convention of pomologists in Philadelphia was a most delightful reunion of kindred spirits. The bond of friendship between pomologists is peculiarly deep and genial. In no other art or profession is there a more generous feeling of rivalry and cordial personal regard among the members, than in this. From the bland, good-hearted, patriarchal president, down to the obscurest amateur, whose name has just been added to the list of pomologists, there are few, we think, but those who, "in the love of Nature," seek their own interest and the public good in the production of "the kindly fruits of the earth." In pomological circles, all distinctions of sect and party are always forgotten. A man of talent, experience, and practical skill, is regarded for his personal worth in these respects alone. Even Bullion, if he be a bad pomologist, must for a time stand back as unworthy of attention; while he to whom Nature has imparted the gift of judging her inner life by her outward forms and works, though his garb be coarse, and his palms bear the marks of toil, stands forth a man, with all the "guinea's stamp," on equal terms with the favorites of fortune or social distinction. In most other professions there is still an aristocracy. Here, talent and success level all distinctions to a remarkable degree. Pomologists, working a common soil, no doubt come sooner than other men to feel their littleness in the presence of the Great Parent; and hence the charming feeling of generous brotherhood which springs up in all hearts, when earnestly devoted to horticultural pursuits. The attendance at the late pomological convention was truly national. All parts of the great republic were represented. In horticulture, at least, we are still *unsectional*. South Carolina, Georgia, and Massachusetts, assemble together in our conventions, in pleasing harmony, and in noble rivalry. If our form of government did more to foster agriculture, horticulture, and fruit-growing, and less to excite angry political feuds, it would be far better for her increasing millions, to whom the fruits of political strife are but as the "apples of Sodom," as compared with the luscious products of horticultural skill.

KEYSTONE, Philadelphia.

[That's so; and it is some consolation to know that there is a common ground on which we can all stand, whatever betide. Whatever the politicians do, let us horticulturists, in all sections and climes, stand together like brothers, cultivating the kindly fruits of good fellowship.—*Ed.*]

NEW BRIGHTON, Staten Island, December 20th, 1860.

PETER B. MEAD, Esq.—*Dear Sir*,—I have read, with much interest, the discussion of the boiler question which has taken place in the HORTICULTURIST since you published my article on Heating Apparatus for Horticultural Glass-houses, in March last, and find no proof worthy of notice to contradict my statement, as to the double cone boiler of Weathered & Cherevoy being the best with which I had been acquainted. It appears, however, that Mr. James H. Park, of Brooklyn, does not so think, if we are to judge from his remarks on page 585 of your present issue. In these remarks he admits that “an article in the July number of the HORTICULTURIST, in which the heating apparatus put in for me by Weathered and Cherevoy is so accurately described by your correspondent ‘B.’ that I am satisfied, beyond doubt, that my place is referred to, as there is nothing else in Brooklyn approaching his description.” And he further writes: “I was compelled to stay up nightly until midnight, in cold weather, while my man had to be on hand at five in the morning, to keep my plants from freezing; the thermometer being often, in one house, at 38°, and in the other at 42°.” This gentleman “B.” says: “A very skillful gardener in this city does business in a house one hundred and thirty feet in length, of an L shape, sixty feet of which is span roof, twenty-two feet wide, ten feet high; the remaining seventy feet is lean-to, fourteen feet wide, and same height;” and further on, “he makes the water boil . . . with No. 4 of the *saddle and conical boiler*, and five hundred and twenty-six feet of four-inch pipe.”

Now, as Mr. Park has endorsed, over his own signature, all that “B.” as above stated, has written, there must be something requiring further explanation before this boiler ought to be condemned. Let us examine how the case stands concerning his peculiar position and requirements, and whether or no the boiler is at fault. In this example we have a No. 4 boiler, and five hundred and twenty-six feet of pipe; the makers guaranty this size to boil the water with five hundred feet of four-inch pipe, and I have seen Mr. Park’s own acknowledgment, in writing, that the water was made to boil in his. This is all that is claimed for the principle, either with this or any other model, (excepting on the dangerous high-pressure plan;) consequently, there must be an error somewhere else. A trifling calculation may, perhaps, plainly show up the delinquency.

The height of the upright front of these two compartments is not given, but it is not likely to be less than five feet; accepting it at that, whether inside or outside matters not materially, and we have a cubic bulk of about nineteen thousand two hundred and ten feet of air to be warmed by the pipes. Considering that in the coldest night 45° be required in the span-roofed, and 50° to 55° in the lean-to, unless in a most extraordinarily sheltered situation, there ought to be not less than one lineal foot of four-inch pipe to every twenty cubic feet in the house, which, according to the above measurement, will amount to nine hundred and sixty and a half feet of pipe; and, as this comparative calculation is a demonstrated fact to all persons of proper experience, it is readily seen where Mr. Park’s failure is. The thing speaks for itself so far. A large (No. 5) boiler, and corresponding length of pipe, are absolutely necessary.

With regard to the constant attention required, which Mr. P. complains of, I have to speak very differently, and can not see how, or under what circumstances, the fire can not be left over five hours. During the whole of last winter, and so far in this, we have had here a No. 3 (one size smaller than the above mentioned) boiler of this make to work, and it warms, satisfactorily, a Camellia house seventy-eight feet long, twelve feet wide, and fourteen feet high, facing W.N.W., and on an exposed hill. When the weather is not severe, the fire is not even drawn out of the furnace oftener than once a week; and with the most intense frost, about every third or fourth day. The only attention given, is to rake down of an evening, filling up well with coals at the same time; the door is then closed for fifteen minutes, when the heat is up; the damper and ash-pit are now partly closed, according as the draft of the outside wind is quick or slow. Nothing further is needed until morning, although we occasionally throw on one or two shovelfuls of coal at nine or ten o’clock P. M.; but this latter is only a matter of extra caution, and, generally, might be dispensed with. In the morning the door is thrown open, the ash-pit entirely, and the

damper nearly closed, and thus the remaining fire slumbers along till evening again. Of this, Mr. P., or any other person, may have ocular demonstration, if they feel so inclined. The quantity of coals consumed by this boiler, from the beginning of November till the middle of April, is not over six tons, and the temperature is so steady that I will guaranty to tell, before entering the house, within 2°, what the thermometer registers at three in the morning.

I hope, Mr. Editor, that this important subject may be discussed in a friendly spirit, until we all know which is the best boiler in existence. Let each one put his name to his article, as evidence of his good faith. For myself, I speak without fear or favor of any person; and again repeat, after over thirty years' experience, that none has given so much satisfaction as the above mentioned.

Yours most respectfully,

WM. CHORLTON.

[Mr. Chorlton treats the subject in a practical, common-sense way. Those who have boilers may gather some useful hints from the above. It is something to know when we have got a good boiler, but more to know how to manage it; and just here, we think, a great many fail. In discussing a subject of this kind, we want to know the length, breadth, and height of the house; the length and size of pipe; the quantity of coal consumed; and other matters of this kind, all of which sensibly affect the results. Something like a true test might be reached by attaching different boilers to the same range of pipe, and noting the quantity of coal consumed by each in a given time, the average temperature, etc.; the condition of the atmosphere outside to be the same in all the trials. The structure of houses varies so much, that four hundred feet of pipe may be sufficient to heat one of given dimensions, and five hundred be insufficient for another of precisely the same size. Exposure, too, exercises an important influence, as do many other things not commonly thought of; so that some such test as we have mentioned above would seem to be needful to give us results approximating to the truth.—ED.]

BABYLON, L. I., December 17, 1860.

TO THE EDITOR OF THE HORTICULTURIST.—*Dear Sir*.—Having noticed an article in the December number headed "*More about Boilers*," I wish to state a few facts in reply. Having seen the boiler manufactured by Messrs. Weathered and Cherevoy in successful operation, and giving great satisfaction, in the extensive orchard-houses of the Hon. W. B. Lawrence, Newport, Rhode Island, and being on friendly and intimate terms with James H. Park, I will state that I called upon Mr. Park at his green-house, in the latter part of January last, and in conversation with him in relation to his heating apparatus, he stated to me it had given him perfect satisfaction; that it heated his houses well with a comparatively small amount of fuel; and in his opinion was the best heating apparatus in use. He recommended it so strongly that I advised my employer to have one of Weathered & Cherevoy's boilers put in his forcing-house, which is one hundred feet long by fourteen feet wide. After it was put in it gave us great satisfaction; so much so, that we made a second contract with them to put one in a green-house forty-two feet in length and twenty feet wide, and a propagating house twenty feet by eleven feet. This has also given good satisfaction. There are also ten other boilers of Weathered & Cherevoy's manufacture, within a few miles of where I am employed, and so far as I can learn, in conversation with the gardeners who have them in charge, they are perfectly satisfied with them. As the article in question appears to have been written for the purpose of injuring the well-earned reputation of Messrs. Weathered & Cherevoy, I am constrained to differ with Mr. Park, and add my testimony in favor of these gentlemen, being a friend of truth and fair play.

I am yours respectfully,

MARK WIGHTMAN,

Gardener to Alfred Wagstaff, M. D., Babylon, L. I.

[There is a mistake somewhere in relation to this matter. Mr. Park spoke so confidently that

we supposed our correspondent "B." must have referred to some other party. Since he volunteered an impeachment, we must in fairness make room for a response.—ED.]

TO THE EDITOR OF THE HORTICULTURIST.—*Dear Sir,—* In noticing, at your request, Mr. Park's production in December No. of the **HORTICULTURIST**, I do not think it necessary to state whether Mr. Park is, or is not, the "very skillful gardener" referred to in my communication on page 338 of **HORTICULTURIST** of July last.

Mr. Park says he is the man; but he insists that my statement does not answer the description of his house; nor the quantity of coal he used; nor the power of his heating apparatus; nor the temperature he kept up; nor the labor and care he found necessary to bestow on the whole concern; therefore, on his own showing, he is not the very skillful gardener I refer to. But this I will say; I will prove to a jury by living witnesses all I said on the subject, and if Mr. Park persists in denying it, he only shows his desire to impugn the honest truth.

The person I referred to, among other things, told me he did not use more than eight tons of coal in a No. 4 boiler. Mr. Park says he had "three other fires," meaning four altogether, which would be about four tons to each fire; if that be all the coal he burned in his heating apparatus, for the time stated, it is not very surprising that he could not raise the temperature of his house to a white heat; his closeness is closer than I thought it was.

I have in use a heating apparatus made by Weathered & Cherevoy, consisting of a No. 5 boiler, attached to nine hundred and thirty-seven feet of three-inch pipe; it burns a ton of coal a week, and I am willing to supply it at that rate until spring appears; but it heats a range of four houses, two hundred feet in length, of an L shape, with the boiler in the angle, and so arranged by cut-offs that I can heat one, or the entire range, at any time; and this is sufficient to satisfy me of the efficiency of any heating apparatus manufactured by Weathered & Cherevoy.

But there is a well-known fact affecting Mr. Park's ability to manage a hot-water apparatus, which, in justice to the party he maligns, ought to be told, and it is this: In December, 1859, Mr. Park went from home, and left "my man" in charge of his heating apparatus; and on his return he found the pipes quite cold and the boiler red-hot; and instead of letting down the fire, he quickly filled the boiler with cold water, and the boiler burst, and could not help it. This fact proves three things: first, Mr. Park is not a "very skillful gardener;" second, he does not know how to use a hot-water apparatus; third, not knowing how to use it, he can not obtain its best result.

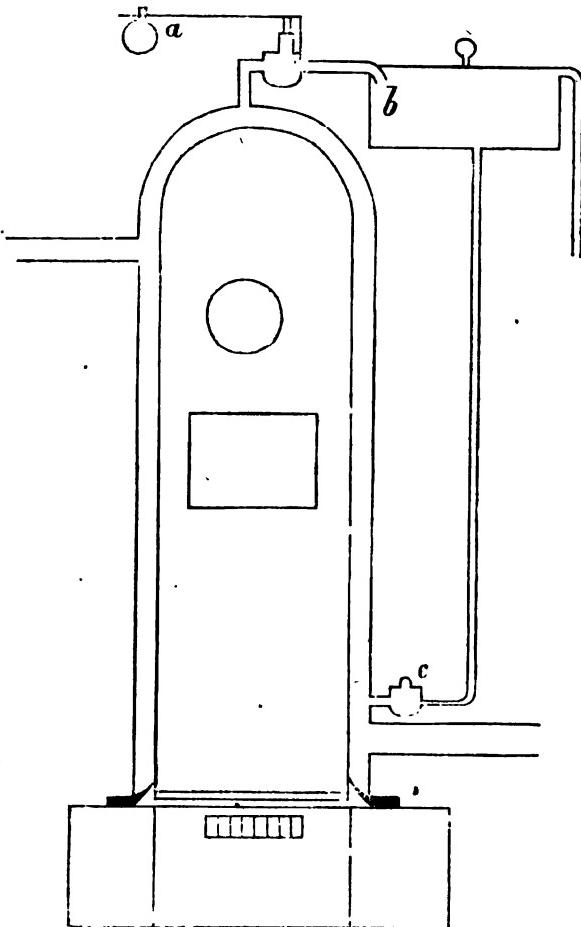
B., of Brooklyn.

[We erased the concluding paragraph of the above after the matter was in type, deeming it somewhat out of place, except over^{the} the full name of "B." It seems strange to us that Mr. Park should have made the statement he did, without some reason for it. All the public want to know are the facts connected with the working of the boilers, divested of all personal considerations whatever.—ED.]

ED. HORTICULTURIST.—*Sir,—* I have noticed with interest the several communications upon heating, and have felt a strong desire to put in a word; but have been deterred by the fact that I was only an amateur.

Mr. Park's letter, however, confirming, as it does, the opinion I formed a his place last year, emboldens me to say my say in the matter. The chief objection to the common hot-water, and also to steam apparatus, I take to be, an insufficient range in the amount of heat that can be evolved. This, I think, is overcome by a high-pressure hot-water apparatus, as per sketch. This can be kept in action with the water only blood warm, and in a few minutes can be run up to, and maintained at, any required point, up to say a hundred pounds pressure, by simply weighting the valves, and firing up. And, by the way, I think "economy in fuel" is too much harped upon; you can not get something out of nothing. If you want heat you must burn fuel; and Mr. Park,

instead of growling at his furnace for using up so much coal, should thank his stars that it had the capacity to do it.



Scale one inch to the foot.

a Regulating valve.
b Feed tank.
c Check valve on feed pipe.
 Furnace of $\frac{1}{2}$ inch iron.

Water space $1\frac{1}{2}$ inch.
 Circulating pipe, $1\frac{1}{2}$ to $2\frac{1}{2}$ inch.
 Supply and overflow pipes, $\frac{1}{2}$ inch.

BROOKLYN.

[This is another "Brooklyn," distinct from the other. We should like you to have said something about the probability of "blowing up" with a high-pressure boiler; the amount of danger in the one you propose; how to avoid it, etc. Will you not do so, and go a little more into detail with regard to the capacity of your boiler, etc.? People *do* grumble about burning coal; sometimes unjustly, but oftentimes with good reason. What we want, is something in the way of heat for what we *do* burn.—ED.]

HARTFORD, Conn., December 14, 1860.

MR. PETER B. MEAD.—*Dear Sir*.—I understand that you are a member of the Imperial Society of Natural History of Russia, and that their diploma was conferred upon you for the distinction that you have gained by your knowledge of vegetable physiology, and especially for that branch of it which pertains to the propagation of plants.

As this is now a subject of particular practical interest, I have been hoping to see the valuable information that you possess, together with an account of your experiments, placed before the public.

For my own immediate advantage I venture to ask a few questions, which, for the general benefit, I hope you may find it consistent with your convenience to answer through the medium of your very valuable journal.

Are trees which come from the nursery with a few large, long roots, better than those with many fibrous roots? And if the long roots are better, should they be preserved and planted with their entire length? I have in mind particularly pear trees; and concerning pear and apple stocks, I would ask the same question, shall they be cut back severely to induce the formation of fibrous roots?

Are our hardy native vines, Delaware, etc., made tender by propagation under glass?

Are vines, well grown in pots, one season, from single eyes, better or worse than those grown in open air?

Is there any special advantage in planting vines two or three years old, over vines of one year's vigorous and healthy growth?

Are the "best layers" the *best plants* for special purposes; for instance, the immediate production of fruit, and hardy wood for propagating purposes?

Are the quantity and quality of the wood of vines indicative of the quantity and quality of the roots, and *vice versa*?

Perhaps I have asked too many questions, but far less than I wish to have your experience upon; and doubtless many inquirers will be benefited with me by your answers.

Very respectfully yours,

Geo. H. GOODWIN.

[The above is one of the two or three articles saved from the fire, and we therefore regard it with peculiar favor. It is true that we have the diploma, (in the most uncouth Slavonic characters;) but, as we have never shown it except to a few friends, we do not know how it came to the knowledge of an entire stranger, as you have been up to the time of writing this letter. The results of our investigations and experiments we shall publish when we shall have more fully completed them. In the mean time, we shall endeavor to answer your questions as explicitly as they are put.

Trees with a "few large, long roots," are not only *not* "better than those with many fibrous roots," but they are those that are to be avoided, except as a *dernier resort*. When you do get such, shorten them in, to induce the formation of secondary or fibrous roots; coiling the root will often produce the same results. Prune the head of the tree at the same time. This will apply to all your trees.

Hardy native vines are *not* made tender by being propagated under glass under proper conditions; on the contrary, the wood of such vines, when properly grown by an intelligent propagator, is firmer and better ripened than in most vines grown in the open air. They are, consequently, in better condition for planting.

A vine grown one season in a pot, from a single eye, is, in our estimation, the perfection of a young vine; and it is better grown under glass than in the open air, because of the better condition of the roots.

There is no special advantage in planting vines two or three years old; some think they will

get more wood from old vines to propagate from; but we think there is a fallacy here. Briefly, we prefer vigorous young vines, one and two years old, well furnished with secondary roots. We would choose such a vine, one year old, in preference to one three or more years old.

For the "immediate production of fruit," and "hardy wood to propagate from," a *good* layer is a good thing; but a *bad* layer is a bad thing for these or any other purposes. A *good* layer is one well furnished with secondary roots all along and close up to the wood: one not possessing these conditions we advise you to avoid at any price.

The quantity and quality of the wood are indicative of the quantity and quality of the roots. A firm, short-jointed, well-ripened cane, indicates an abundance of healthy secondary roots. We have a greater control over the roots of a plant than is generally supposed, and this fact ought to influence our practice more than is usually the case.

We hope these replies will be in some measure satisfactory to you. They are necessarily brief, but you can rely upon them in buying and planting your trees and vines.—ED.]

CALMDALE, December 22, 1860.

MR. P. B. MEAD,—Yours of 20th is a real stunner. So the consuming element (fire) don't even spare the HORTICULTURIST. Why don't it spend its fury upon the useless trash in the literary line, and leave such noble works as the HORTICULTURIST alone? But as it is done, the next best thing is to be up and doing again. Since my humble attempt at lending a hand has shared along with the wreck, I will repeat it. The simplicity of taking impressions of apples or pears will be apparent to any one when they once try the experiment I herewith send, and even though it be not new to many, it may be new to some.

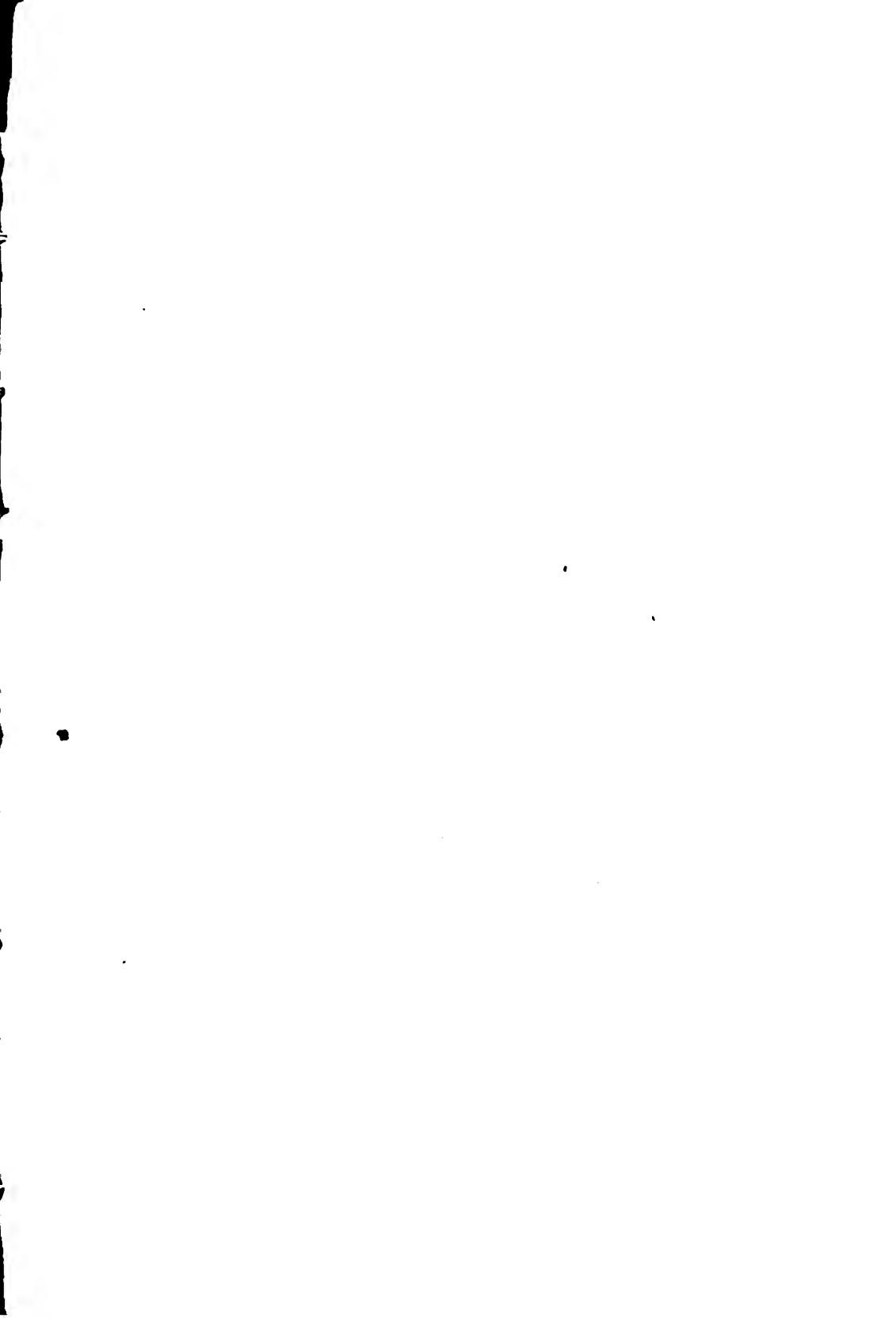
Cut the fruit lengthwise exactly through the middle, halving the stem, and also equally dividing the blossom end. Now you have your plate. Rub ink over the half, and clap it upon your paper, which should lay on an even surface. Press moderately on the apple, and with a knife blade see that the stem be pressed down; also the little points of the blossom end. Any one accustomed to coloring could make a very neat thing of it. I have an album of these kind of impressions, under each of which is written the date of ripening; the name of the variety; of the person of whom I got the fruit, as well as his place of residence; which is often of value when I desire to get scions, in case it be a variety ripening out of the budding or grafting season. Herewith I send you a few impressions, taken to show you how it looks; from which you can best judge whether it is worth a notice or not.

P. S.—A pear should not be too ripe, or it will not bear sufficient pressure to print well.

Yours truly, S. M.

[Thank you for your ready response, and your sympathy. Fire, in this world at least, seems to make no distinction between the good and the bad. We are "going ahead" again, however. The impressions sent are nicely done, and the process is one which will be useful to many of our readers; it is better than a mere outline. We would suggest the use of printer's ink instead of writing ink, with the paper slightly moistened; or India ink—both of which, we think, would spread better on the fruit. We had intended to give one of the impressions sent, but it is too late now.—ED.]

OUR PAINTER.—We learn, just as this sheet is going on the press, that our old printer, Mr. Jenkins, has taken rooms at No. 20 North William Street, where he will be glad to see his old friends. We hope none of these will forget him, and that he may find scores of new ones.





1. BEAUTIFUL. (*Maclean*) 2. THE REV^P H. MATHEWS. (*Kirtland*)

for THE HORTICULTURIST

Published by C. M. SAXTON, BARKER & CO, New-York

The Central Park. - Part I.

This question, undoubtedly, related mainly to the character of the park, and
it is clear, for in no other respect would it be in the least difficult, that the
leaves must doubtless suppose, and very justly, too, that our own great trees
would also, in their composition and individuality, would possess a
character of being reproduced on a small scale. But do we find any of them
so in the Central Park? Not in the least. There is not the smallest trace
of any of them, or anything of the kind has been, or will be attempted. Our
friends the teachings of nature, in her grandest manifestations, have long since
abandoned the stiff and meaningless forms, devoid of expression, haying
done with them's end. We regret that the actual condition of things at the
Park should render such criticisms necessary, and we judge the best course
is to change with hereafter be introduced, as to disarm them.

and let us be a little more specific, in order that our conclusions may be better understood. In our examination of the trees we find in all those forests a branching completion, and in others in course of development, that a uniform plan of grouping has been adopted, and that plan consists in forming a group of one kind of tree, only, the only exceptions consisting in the first growth of the Pines. We have a group of Scotch Pines, a group of Norway Spruces, a group of Hemlocks, a group of Paulownias, a group of B. robes, a group of Silver Firs, a group of creeping Junipers, &c., reduplicated *all along*, and so, and even groups of Cedro-lataxas, Taxas, &c., and these, again, in relative positions, we should judge were expected to grow into as high, or perhaps as tall as the Hemlocks; and we have no doubt they will. These groups of a kind, densely planted, are scattered here and there in such a way as to produce an effect not much unlike clumps of Vaccinium on a treeless hillside; and the impression is produced of numberless little plots, each with a separate ownership.

Now we do not object to an occasional group of trees of a kind; but, with this exception, we object *in toto* to the grouping in the Central Park, both trees and shrubs. It is dull and monotonous, and altogether wanting in beauty and effectiveness; besides, it may be used as an argument for want of knowledge and skill on the part of the person who directs it, which we should



JOHN MATTHEWS, *The Artist*

100 EAST

23rd & U. New York.

The Central Park.—No. 3.



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In former articles we have criticised the close planting of the trees, &c.; in the present we propose to say something about the manner and character of the grouping. We had been led to conclude, from the promises made at the initiation of the work, that we should now behold something very different from what meets the eye of the visitor. We were told by Mr. Olmsted that we should have an *American* park, something unique and imposing; instead of which we find copies of what we regard the worst features of European parks, as we find them described. By an American park was meant, of course, something grand and imposing, which we might have had, and may even still have.

The expression, undoubtedly, related mainly to the character and disposition of the trees; for in no other respect would it be in the least degree apposite. It was no doubt supposed, and very justly, too, that our own grand forests and woodlands, in their composition and individuality, would present a copy worthy of being reproduced on a small scale. But do we find any thing like this in the Central Park? Not in the least. There is not the smallest indication that any thing of the kind has been, or will be attempted. On the contrary, the teachings of nature, in her grandest manifestations, have been ignored, and stiff and meaningless forms, devoid of expression, have been adopted in their stead. We regret that the actual condition of things at the Park should render such criticisms necessary, and we indulge the hope that such changes will hereafter be introduced as to disarm them.

But let us be a little more specific, in order that our objections may be better understood. In our examination of the Park, we find in all those portions approaching completion, and in others in the course of development, that one uniform plan of grouping has been adopted, and that plan consists in forming a group of one kind of tree only, the only exceptions consisting in the natural growth of the Park. We have a group of Scotch Firs, a group of Norway Spruce, a group of Hemlocks, a group of Paulownias, a group of Birch, a group of Silver Firs, a group of creeping Junipers, &c., reduplicated *ad infinitum*; yes, and even groups of Cephalotaxas, *Taxus*, &c., and these, from their relative positions, we should judge were expected to grow into as huge proportions as the Hemlocks; and we have no doubt they will! These groups of a kind, densely planted, are scattered here and there in such a way as to produce an effect not much unlike clumps of *Vaccinium* on a treeless hillside; or rather the impression is produced of numberless little plots, each with a separate ownership.

Now we do not object to an occasional group of trees of a kind; but, with this exception, we object *in toto* to the grouping in the Central Park, both trees and shrubs. It is dull and monotonous, and altogether wanting in beauty and effectiveness; besides, it may be used as an argument for want of knowledge and skill on the part of the person who directs it, which we should

be sorry to see; for it could be said, and probably will be said, that any ordinary gardener can group trees in this manner. In the way of *composition*, the highest development of Landscape Art, nothing whatever has been attempted; light and shade, the commingling and harmonizing of color, depth, breadth, massiveness, shelter, &c., have thus far been ignored, not, probably, so much from want of boldness and originality, as from a determination to reproduce some of the tamest features of European parks. Ruskin, in one of his most eccentric moods, attempts to show that a forest composed entirely of Scotch Fir would be a sublime sight; a huge, murky thunder cloud, surcharged with vials of wrath, and covering the whole face of the earth, would be still more so, but neither, we imagine, would be calculated to produce any very pleasurable emotions. If our friends at the Park would have some idea of our notions of tree grouping and composition, let them take the Albany steamer some fine morning, note a good many things they will see by the way, leave the boat at Rhinebeck, and visit the princely estate of the Hon. William Kelly; they will find the passage and the visit exceedingly suggestive. If they wish for a fine example of undergrowth and filling in, let them visit the fine country seat (now in course of completion) of Charles Butler, Esq., at Scarsdale. If they do not know these gentlemen, they can make use of our name, which will insure them a hospitable reception and every attention they can desire. We had forgotten one other matter. If they would know what a "thing of beauty" a lawn can be made, let them visit the beautiful residence of H. W. Sargent, Esq., at Fishkill, where they will also see a good many other things to interest them. These three visits would be worth a dozen visits to Europe.

We are more than ever desirous that the work at the Park, as a whole, and in all its details and materials, should be in harmony with the highest development of landscape art; and we wish to aid in this to the best of our ability; hence our suggestions. We are glad to perceive, that since we wrote our first article, there has been a manifest improvement in the tree planting, so far as close planting is concerned. Let this go on still further, introduce miscellaneous grouping, study out composition, &c., as hinted above, and we may yet have the Central Park the model we all desire. And so we close for the present.

SPRING HOT-BEDS.

BY A JERSEY MARKET GARDENER.

As the season is now coming around for our preparatory spring operations, a few remarks on our manner of constructing hot-beds might be of service to some of your readers who are only amateurs in such things, and who (keeping no regular gardener) are often sadly puzzled and befogged by the mystery that is too often attempted to be thrown around some of the most simple of gardening operations by some of our would-be "scientifics," whose "little knowledge"—*practically*—proves often, not only to themselves, but their unfortunate auditors, "a dangerous thing."

Our manner of preparing hot-beds being on a large scale, we necessarily employ the most economical means to get at the result desired.

In the materials for the hot-bed there is very little choice; there is nothing

better yet than stable manure, or stable manure and leaves from the woods, when we can get them, in equal proportions. As we never begin to use our hot-beds for seeds before the first week in March, it is quite soon enough to collect the materials for heating two or three weeks before; and as, at that time—the middle of February—the weather is often severe, it will much assist the fermentation of the materials if put in a shed or some place where they will be partially sheltered. This is worthy of attention, as I have often seen large quantities of the heating materials frozen stiff by a few days' exposure to a zero atmosphere.

When a sufficient quantity of the manure is procured for the purpose required, it is thrown in a heap and moderately firmed; the mass will have become heated throughout in from four to seven days, according to the state of the manure and the weather. It is then again turned to allow the escape of the "rank heat;" twice turning is usually necessary to reduce the violent heat, especially when only manure is used, the mixture of leaves greatly diminishing the gross heat of the manure. When thus mixed, one turning is sufficient. The pits wherein we form the hot-bed are from two and a half to three feet deep, six feet wide, and of any length that may be required. The manure is put in to the depth of from eighteen to twenty inches, and moderately and evenly firmed with the back of the fork. The sashes are then put on, and the sun allowed to shine on them, so as quickly to "draw up the heat," which will be in about twenty-four hours from the time of making up the hot-bed. We then, but not before, put on from four to six inches of rich, loamy soil, when the seeds of tomatoes, egg and pepper plants, cabbage, cauliflower, and lettuce may be sown at once.

If proper attention has been given to airing, watering, and covering up the sashes with mats at night, the cabbages, etc., will be ready for planting out in the open ground by about one month from the time of sowing. But the tomato, egg and pepper plants should, at about that time, be replanted in a slight hot-bed, prepared as before, of about ten or twelve inches in depth; or, by careful covering up with straw mats, they may be preserved in cold frames; but the hot-bed is the safest, if manure can be had. These tender plants, of course, are not safe to be planted out in our district before the middle of May.

On all our hot-beds we use straw mats or shutters at night, straw mats being preferable. A board fence of six or seven feet in height, to shelter from the north and west winds, is indispensable when no such shelter otherwise exists.

[It will be perceived that a "Jersey Market Gardener" makes his beds in pits, which we consider far preferable to making them on the surface. The beds thus take up much less room, require less material, retain their heat longer, and in all respects require less trouble and care.—ED.]

LANDSCAPE ADORNMENT—NO. VIII. TERRACES.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

THE right line style of landscape gardening has now almost, by common consent, become obsolete—it is looked upon as one of the memories of the

past. Still it has been no easy matter to yield up our prejudices in its favor; grand and attractive as a display so entirely artificial may be, it sinks to a lower grade when compared with the beauties of the natural style. It is evident to all who have a knowledge of true art, that there is no higher scale of beauty known than that indicated by the teachings of nature. All forms of the imagination must yield to the exquisite beauty of natural forms, and the highest conceptions of angelic form and beauty must be content by adding wings to a beautiful woman.

The right line in the formation of terraces seems to be a lingering reminiscence of the old school, and one that does not meet with much disfavor among the practitioners of the new. We propose, however, to advance some suggestions which, to our notions, render the use of terraces in landscape adornment not only applicable, but thoroughly in keeping with the admitted excellences of the natural style.

Perhaps there is no better school for the study of natural terracing than in the alluvial bottoms or valleys of western rivers. Although on a grand scale, the hint is sufficient for one who has an eye for landscape beauty. The different stages of rapid running water following the graceful meandering lines of its direction, has worked out, in the course of ages, a series of natural terraces, the outline of which is a continued succession of graceful curves, bold projections, and beautiful indentations; the surface of each terrace is a water level from front to rear, and descending in its length with the descent of the stream, say one to two feet per mile. These prairie bottoms and terraces are handsomely grassed during the summer months, and the illustration in its natural state is as perfect as if they were constructed from a plan. Now, as a matter of taste, compare the level grade and curved outlines of a natural terrace (which we say should be adopted in the natural style of landscape gardening) with the bold, artificial straight-line system that is every where in use. Will the broad sunlight on one compare with the exquisite light and shade that are forever changing in the other? and will the single view that takes in all the artificial terrace be equivalent to the unwearying variety that the natural terrace affords? Does not the natural terrace give greater facilities for a display of taste? Will not lawn, or flowers, or ornamental trees find a chance to produce new beauties in general effect? and will the staring plainness of the one compensate for the inviting charms of the other? We are open to conviction.

Again, as a matter of construction. The history of terrace building all up and down the Hudson is a history of failures; the labor and expenditures of weeks have slipped away in a single night—the long, straight line of earth yields all at once. That principle which in architecture introduces buttresses in walls sustaining a thrust, does not enter the head of a terrace builder; he, half-fledged and unsophisticated, has not the shadow of an idea whether his terrace will stand one night, one year, or be always permanent; it is not a matter of fact with him so much as a matter of hope—a sort of a gambling experiment, and his neighbors' failures show that the chances are against him.

Now we do not pretend to say that it is impossible to build a permanent straight-line artificial terrace any where, because in the hands of an educated civil engineer nothing is impossible; and a landscape gardener who is not well read up in all the details of civil engineering, has got the biggest half of his profession yet to learn. We state that, in the construction of terraces, the natural terrace affords a more tasteful use of the principles of construc-

tion, and a better opportunity to conceal the art that reproduces the designs of nature; the winding outline broadens the base, the salient points are the buttresses, and the thrust or pressure of the earth, instead of being down the slope, is toward nearly every point of the compass; and should a sudden flood weaken any point, there are such different conditions of security that none other would follow it.

In the formation of terraces in ground liable to slip, we recommend strongly, from a long practical experience, the use of fascines or brushwood, to be put on in alternate layers with earth; by crossing and lapping the end of the brush, this network may be extended indefinitely. The enormous strength of wood, pulled in the direction of its fibre, is not thoroughly understood. Practical experiments show it to be one fifth the strength of wrought iron; those who have endeavored to pull up strong roots have some idea of it. The durability of wood below the surface of the earth, where it is not exposed to the action of the atmosphere, has scarcely any limit, and for all practical purposes may be considered permanent. A judicious and intelligent use of brushwood in any class of earth work having steep slopes will be as effectual as if the whole were interlaced with roots.

We do not mean to convey the idea that a natural terrace is a series of scallops, or that there is any repetition in its forms; on the contrary, variety must control the design—nature does not repeat herself. It does not follow that each successive terrace should copy the same form above it, for there is no arbitrary rule or supposition in any matters of taste. Terraces about the house, or as used in connecting the house with the grounds, should be of an artificial or architectural character, being sometimes used as a medium to break any abruptness in passing from natural scenery, in which art is concealed, to a form of construction in which art must be apparent.

[On the score of beauty there can be no doubt that Mr. Woodward is right. The subject deserves to be well considered.—ED.]

GRAPES AND PEARS.

BY A. HUIDEKOPER, MEADVILLE, PENNSYLVANIA.

Two years ago, some correspondents, with but a poor appreciation of the value of a free press, were gravely inquiring, in the columns of a useful and widely popular journal, whether the HORTICULTURIST ought not to be tabooed by all pomologists; the gravamen of its offense being, that the editor was supposed to be friendly to a more general introduction of grapes, and had admitted to his pages the inquiry, whether pears on dwarfs could be profitably grown for the market. The evidences on that occasion were but in keeping with the common philosophy of life. Success is ever prone to hang its banner upon the outer walls, while failure is equally disposed to shield itself from public observation. It reminded me of an incident related by a friend who had been on a visit to New Orleans. "In driving about the city one day," said he, "my chaperone pointed out a very costly and imposing residence; that, he observed, is the residence of Mr. A., who came here from the North some twenty years ago, a poor young man; he had a good constitution, which

withstood the yellow fever, and now he has amassed the princely fortune which his homestead would indicate. But, continued he, of the twenty thousand poor young men who have come here from the North in the mean time, who did not make a fortune, who did not survive the yellow fever, and whose bones lie interred in our city churchyards, no outward sign remains, and nothing is said of them." I refer to that discussion simply to show that science never suffers from the ventilation of its facts, and that the HORTICULTURIST, in sustaining as it should the independence of the press, has not inflicted any of the anticipated injury upon the public.

While vine culture has fortified itself vastly in popular estimation, there are probably three pear trees sold now for one at any former period of our history. A hundred thousand amateurs will every year be added to the list of those who grow dwarf pears, caring but little "if they are profitable for the market or not," if they can only grow them for themselves. Even the very difficulties and limitations of pear culture pointed out, with many minds became incentives for the experiment; for such is humanity, that

"If the way be dangerous shown,
The danger's self is lure alone."

Then that discussion led on to a world of practical information in pear culture well worth having, such as the proper conditions of soil and culture to insure success; the giving the trees a good start at first, and not hoping to coax them into thrift after a year or two of stint and starvation; the philosophy of deep and shallow planting, of high and low grafting, &c.; to say nothing of the hope and encouragement to those whose trees had been frozen and blighted, given by sundry fathers in pomology, who, in grave council assembled, resolved that summer's heat and winter's cold were but other terms for nonsense, *ours* being the best climate for pear growing in the world, the isothermal lines of *our* climate not being very clearly set forth on the black board of illustration.

I have heard of but two or three instances of blight, and that on a limited scale, and the present has been a very propitious year in pear growing in this region, almost all those who have trees having had fruit. The leading varieties, such as the Seckel, Tyson, White Doyenné, and Genesee, fully sustained themselves, both in size and the character of their fruit; but many of the summer varieties were flavorless, probably owing to the unusual coldness of the season; even the Nelis, one of the best generally of all pears, hardly came up to its proper standard of excellence. The fruit of a Buffum tree with me (I suppose the tree to have received some injury by the water, from a spout during the winter,) cracked partially, early in the summer, but before the season was over the cracks healed up and the fruit became sound at maturity.

The blight shows itself on the pear tree in several different ways, or with different degrees of malignity; sometimes it is localized in a limb, for which the remedy is thorough amputation; sometimes the epidermis will become black, while the inner bark appears to be all right, and the tree can be saved by removing the discolored part, when a new and sound bark takes its place. The only standard tree I have left was affected in this way some years ago, and is now a sound tree, producing fruit. Another form of the blight appears to be a vitiated condition of the sap, for which I suppose there is no remedy. Persons who have trees that turn suddenly black in midsummer are apt to suppose the disease comes on at that time; but I apprehend a careful

examination will always show an unsound condition of the tree several months beforehand.

It is no evidence that a tree is sound because it breaks into leaf, or even makes a reasonable growth; many a tree will do this after the bark is entirely winter-killed at the collar of the tree: pepperage or gum tree will continue to live for several years after being girdled. The solar heat at first only brings into action the sap in the body of the tree, without reference to a new supply from the root; a limb subjected to a reflected heat will often come into bloom before the rest of the tree has got fairly into bud; and this fact makes it questionable if it is practicable, as is sometimes suggested, to retard a tree so as to escape spring frosts, by the packing snow about the roots of it.

The injury which fruit trees sometimes receive from unseasonable reflected heat from the earth, suggests further experiments with our forest trees as foundations for the pear. Of the stocks on which it is known to grow, viz., the apple, crab, quince, thorn, mountain ash, and June or service berry, all but the last are more or less subject to the blight. The June berry is hardy, and if it will answer, as some correspondent says it will, it may be worthy of more extensive trial. No doubt, affinities with the pear are not all exhausted, and other trees from the forest might answer likewise. The budding a few limbs at the proper season would test the matter at a small outlay of trouble, and possibly show the truth of the old adage, that an ounce of practice is worth a pound of theory.

In 1853 I had a small vineyard built, in size 20 by 22 feet, of which a report is made in the *HORTICULTURIST*, in vol. iv., page 545. At the same time I devoted an equal amount of space to a dozen dwarf pear trees. The grounds have been about equally enriched since, with well-decomposed manures, and vines and trees have alike been protected in the winter with straw. The paid-for labor has been about the same with regard to both; therefore I make no note of it, or of the pruning the vines, thinning the fruit, and irrigation, which have throughout been a matter of personal recreation and amusement. No fire was introduced into the vineyard until last year, since when some ten or fifteen times it has been used as a protection from frost. The ground between the pear trees has been annually planted with carrots and beets, and the soil kept clean, light, and in good condition.

Now, although the above is not a very good show for the pears, I would say in candor, that the trees have grown more during the last two years than they did in the preceding five; and if they had not been removed to make room for an enlargement of the grapevines this fall, I have no doubt they would have told a better story for themselves hereafter. A neighbor of mine, whose orchard is on elevated ground, and whose soil is rich but rather wet, had this year a very respectable crop of pears on his trees, five years planted. If dwarf pears do not succeed in this region, it will not be for want of a fair and honest trial.

I will endeavor to send the editor of the *HORTICULTURIST* a sample of wine made by a friend from the variety of grape described in last year's vol., page 365. It has the color and body of good port wine, and would no doubt have been a still better article if some sugar had not been used in the manufacture of it.

In my vineyard I grew two good-sized canes this year horizontally on the ground, so as not to interfere at all with the fruit-bearing vines. The wood

ripened well, and if the canes produce right, I will report again next year. We commenced cutting grapes in the middle of August, and are still (Dec. 17) enjoying our Muscats, crisp, fresh, and luscious as when first gathered; having thus had the fruit in eating over four months, or one third of the year.

The result, then, of a seven years' experiment stands thus:

| | |
|---|--------------------|
| Cr. Grapery—Fruit, bunches in 1854..... | 150 |
| Do. do. 1855..... | 350 |
| Do. do. 1856-7-8-9, 1860..... | 2,300 |
| | |
| Total..... | 2,800 |
| Deduct $\frac{1}{4}$ to reduce to pounds..... | 700 |
| | |
| At 60 cents, a low market price..... | 2,100 give \$1,260 |
| Dr. Original cost of grapery..... | \$150 |
| Add 2 years' interest till paid for by fruit..... | 18 |
| For re-painting, fuel, &c., and vines..... | 52 |
| | |
| Apparent profit..... | 220 |
| | |
| Dr. 1 dozen pear trees and freight..... | \$15 |
| Fruit in 6 years | 50 |
| Do. in 1860..... | 150 |
| | |
| Total, at 3 cents apiece | 200 6 |
| | |
| Loss..... | \$9 |

[Very suggestive. The subject of "tabooing" is one for which we have little respect. An editor, above all men, ought to be independent, and his readers ought to appreciate that simple fact. It is always pleasant to have people agree with us, but then there are always two sides to a question, and a discussion is sometimes, if properly conducted, a short method of arriving at truth. You are all right on that question. You make but a poor show for the pear; we can do better than that; still, we arrive at the same conclusion, that the grape is the most profitable. We shall look for the wine expectantly.—ED.]

THE MAN AT THE PUMP.

BY FOX MEADOW.

"We will just take a look through, if you please. We understand you have commenced forcing?" "Look through with pleasure, sir; but you will see no forcing." "No forcing?" "No, sir, no forcing." "Why, I understood that you forced all your vines." "People very often get into errors, sir, and make very grave mistakes, which we are sorry to see; and if they have told you, sir, that we force our vines, that is a *monstrous* error." "Well," said Mr. Pry, "let us have a look at your bare vines, then; it's no use coming here for nothing." So he got an introduction to "*Vitis Vinifera*."

"Ah, sir, I thought you told me you did not force. How comes it the foli-

age and fruit are showing if you don't force?" "By inducing it, sir." Mr. Pry knitted his brows, shrugged his shoulders, and walked on—*more sharper*—never said another word to us after that, Mr. Editor. We thought he had picked up the name of some plant, and was hurrying home with it as fast as possible to write it down before he forgot it.

Nothing requires, perhaps, more care and thought than the vine in attempting to bring it into growth out of its natural season. There is, perhaps, more damage done by an excess of heat in the early season of the year than from any other cause. We should bear in mind that all our vine-borders are not constructed on "Bright's system," inside the house, with a compost nearly allied to the atmospheric temperature, but that the roots are in a cold, and often-times wet, perishing soil, and that soil, perhaps, not much above the freezing point. Force up the sap, is the cry. Let us understand, first, how it is to be made. A liquidization, first, of all that sap in the branches that has been congealed by the loss of heat the previous fall takes place. Now, let us mark this operation in reference to the heat applied. If *too high* a temperature, this liquid is evaporated, leaving some of the spurs and buds *dead*; in other cases, it will shoot off and burst out, perhaps, in one single eye, with the consistency of a straw. There is no proper circulation of the sap going on. This is what we call *forcing*. The above results are more perceptible in badly-ripened wood, than when vines are regularly early worked. Let us now follow this sap that has been worked up at a high temperature down the vine into that wet, icy, perishable soil. How is it going to return? What have the poor roots been able to *collect* out of that wet, clammy soil? Something congenial to elaborate that beautiful tissue of the leaf, the tender and delicate anther and pollen? Or would this be something like ourselves turned out of a hot room, lightly clad, into the frost and snow, barefoot, to go a distance for a drink of water to quench a parching thirst? What would be our condition on re-entering this hot room? Faint, sick, clogging up of all the pores, tremendous internal heat, and *oh*, I think I shall die! Because plants have not tongues and throats to make a noise and cry out they are *dying!* it appears it is all right. I sometimes think it is well for us that plants are not possessed with good strong muscular arms; it saves us many a box on our intellectual craniums.

There are many reasons why the process of developing the powers of the vine should be slow, and the temperature low, in what is termed "*early forcing*." There is the partial absence of light, which influence has a wonderful power in producing the *dark green* foliage with a texture and solidity that delights us to look on. We say, work steady and low. Let the vine develop *itself*. Do not attempt to develop the vine. Watch the foliage narrowly. If it comes out and seems to stand for a few days all crumpled up, something like a young rhubarb leaf in miniature, you may rest assured that the vine is doing the work just in its own way—expanding just as fast as it can collect material for elaboration; but if you see the young leaf appear, and almost at once it is expanded into its proper form, with a texture that a person with ordinary good eyesight could read a newspaper through, and of a beautiful, delicate light-green, then you may depend upon the fact that you have been *forcing* in good earnest. This sort of forcing is similar to a man we once saw with a pump placed on a heap of ice. The ice was slowly condensing, and he continued with all his might and main to pump up the condensed water, *but it did not come*. After a while, he got exhausted and stopped; presently, away he drives again, and he succeeded in getting some little, and then again it stopped. He would look sometimes into

the pump, and around the pump; he never, as we saw, looked into the right place. We left him looking, and ran home—"more sharper"—to make a note of it.

As soon as the young shoot showing the fruit has grown long enough to discover a leaf or two beyond the bunch, pinch out the point *immediately*; this will throw the sap *direct* into the bunch and remaining leaves. We saw that man at the pump one day *breaking* off the ends of these young shoots after they had grown some eighteen inches past the bunch—snapped off so very easy at a good joint, he said, and was much less trouble. We thought this was very much like chopping off a man's arms and letting him bleed to death. Poor vines, we wish they had tongues.

Increase the temperature gradually as they advance toward flowering. When vines are worked in a medium temperature, they will not require so much *evaporating* moisture as is requisite in high temperatures. Keep the *night* heat not above 60° Fahrenheit. The man at the pump showed us a shoot the other day that had, he said, during the night, grown more than twelve inches. We thought it was no growth at all, but merely *forcing* an elongation of the cellular tissue. When syringing, use common soap in the water *constantly*; it will save some trouble with those little animals that come from *somewhere*, they call red spider, thrips, scale, yes, and mildew.

Begin to thin out the berries from the bunches *just so soon as you can be sure they are berries*. Just try this little experiment on one vine, if it is only to convince *that man at the pump*. Tell him, also, that it is not the amount of that luscious saccharine matter which destroys the productiveness of the vine or its longevity, but that it is the *seed*—that which contains the "GREAT LIFE PRINCIPLE."

Tax this in the vine—in any thing, vegetable creation or animal—and DEATH is the *inevitable doom*.

[It is, no doubt, fortunate for the "Man at the Pump" that vines have not arms, or *his* cranium certainly would suffer. Many of the difficulties of starting vines early would be overcome by converting the whole interior of the house into a border, and planting the vines inside, as we have heretofore recommended. Fox Meadow's caution against using too much heat in *starting* a vine, can not be too well considered, for it is a frequent cause of failure. All who have forcing-houses will do well to think of the "Man at the Pump."—Ep.]

COLOR OF FRUIT.

BY WILLIAM BRIGHT, PHILADELPHIA.

THE pears exhibited by Dr. Boynton, of Syracuse, at the last meeting of the American Pomological Society, attracted much attention from the unusually waxy and glossy appearance of the skin, and the extraordinary brilliancy of their coloring. Dr. Boynton offered to the Society, in some extended remarks, his idea of the probable cause of this color and gloss of skin, but no correct report has yet been given of these remarks in any of our journals. The chief idea was, that the effect above noticed was produced by growing the fruit upon a soil containing a great variety of mineral or inorganic substances, and by the free use of superphosphate of lime, and of potash, soda,

and the common carbonate of lime, which, acting upon silica, produced the silicate of potash, the silicate of soda and lime in abundance, and thus created a covering upon the pears similar to the silicious coating on the corn-stalk. On this dense surface the rays of the sun pencil the prismatic hues with a degree of brilliancy and perfection rarely witnessed. The doctor thought it not impossible that he could so perfect this metallic coating that he could, at some future meeting, present his best specimens of fruit with his own photographic portrait on their sides!

I notice this matter now for the purpose of saying, that those who may wish to experiment in this direction may find some more convenient sources of obtaining the necessary materials, than were mentioned by Dr. B., as his supplies of alkalies were mostly found at the Syracuse Salt Works.

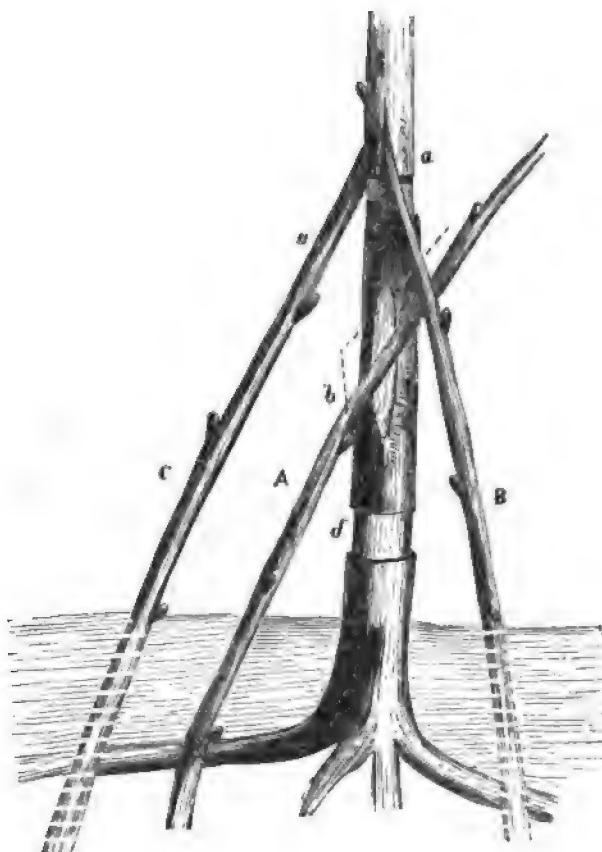
The use of the common "salt and lime mixture" (viz., three bushels of lime slackened with a barrel of brine, or one bushel of salt in solution) will give the chloride of lime and the carbonate of soda, which Dr. B. spoke of so highly; while common sour peat or muck, or even decaying straw, or old litter, or leaves, mixed with sand, will create, *by the action of carbonic acid on silica*, a large amount of soluble silica; and silica, or rotten, sandy rock, dissolved by carbonic acid, will in its turn, by liberating potash from the rock, now dissolve other rock, and form silicate of potash. Hence, sour muck and sand, with a slight addition of salt, lime, and wood ashes, will furnish a cheap and convenient means of producing the silicates which Dr. Boynton thinks such important agents in creating the dense, glossy, high-colored skin of his pears.

The usual method of top-dressing dwarf pear gardens with well-rotted carbonaceous composts in a degree produces the same effect as the above mixtures, and the result, we all know, is very satisfactory.

There is a good deal of plausibility in Dr. Boynton's theory; but we must not expect similar results from using the same means on all soils, for Dr. Beynton acknowledged that his soil was originally a sort of "conglomerate rock soup," made up of the contents of Lake Ontario basin, which no man can hope to imitate, or find elsewhere, in precisely similar combinations. It may be well, also, to caution amateurs, or unscientific persons, against the too free application of alkalies to fruit trees, as there have been cases lately, within my knowledge, where very intelligent persons have destroyed many valuable surface roots, and even entire trees, by too careless or too bold experiments of this kind. The "aesthetic farmer," says the oracular Ralph, "thinks a cow is a creature fed on hay, and gives a bucket of milk twice a day. But the cow that he buys gives milk for three months, and then her bag dries up." Pear trees are very much like milch cows; they require to be fed and managed by a practical hand, or they too will "dry up" most mysteriously sometimes. I by no means reject the aid of science; I only wish to warn Mr. Jesse Rural against excessive fondness for chemical experiments in his first efforts in the garden.

[This caution is a necessary one, for the young experimentalist generally "goes it blind." We are somewhat inclined to doubt whether the beautiful "face" on Dr. Boynton's fruit was produced by additions of his own; it is quite likely, if we may judge from his description, that the salts were naturally contained in the soil. We must accord him the merit, however, of having noted the fact, and led the way in making experiments to produce the same results by the addition of salts and alkalies, in proper proportions and combina-

tions, in soils not naturally containing them. Certain localities (around Boston, for instance) have long been noted for producing pears highly colored and very glossy; others, again, (as portions of New Jersey,) are noted for producing the same kinds of pears of a deep russet. This, unquestionably, is owing somewhat to the mineral constituents of the soil, but probably quite as much to careful culture. The subject is one of peculiar interest, and we hope Dr. Boynton and others will follow up the experiment, and make a note of the result.—ED.]



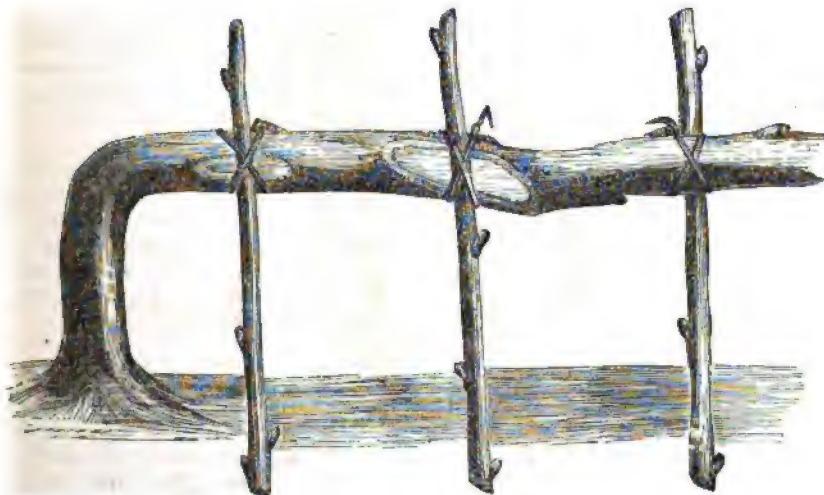
INARCHING—AN IMPROVEMENT.

BY D. L. ADAIR, HAWESVILLE, KENTUCKY.

IN my last I gave a description of my improved method of "Fruit Bud Grafting." I have also made some improvement upon the method of inarching, as described in the January number of the HORTICULTURIST for 1860, from

the *Revue Horticole*, which is explained by figure 1. The branch or scion, A, is set so that it will lay against the root at c. The bark is pared off at the root, and also the scion, so as to bring the albumen of each into contact with the other. Where the scion crosses the stock at b, the same operation is performed. The scion and root are tied together as shown, and at b the stock and scion are well wrapped with any material used in budding, and well waxed; or, instead of the wax, I find that drawing up a hill of earth some three inches above where they cross answers every purpose. A ring of bark is taken off at d for the same purpose as described in the directions for spur grafting. After the graft has set, the scion and stock are cut off at the dotted lines at b, and the root at the dotted lines shown thereon, which is planted as a separate tree.

I find inarching a very convenient mode of propagating such trees as do not grow well out of doors from the cutting; also roses and grape vines. B and C, fig. 1, show how it is done. The lower end of the cutting is inserted in the ground, and the upper end inserted under the bark at a a, as described in spur grafting, and tied the same way. After the cuttings have grown one year and struck roots, they are separated from the stock, taken up, and planted in the nursery rows. A dozen or more plants may be raised thus around a single mother stock, without injury to it.



I modify the process somewhat when I apply it to the grape. Figure 2 will explain how it is done. A vine or a branch of a vine is laid down, horizontally, and the cuttings, 4 or 5 inches long, containing two or more eyes or buds, are inserted in the ground. The bark is removed from the cutting where it crosses the vine, and also from the side of the vine, as before described. They are firmly tied together, and cuttings, vines, and all covered with earth, so as to have the upper bud on the scion covered about $\frac{1}{2}$ inch. The cuttings may be placed three inches or even less apart along the whole length of the vine. After

they have grown one year, they may be taken up, the vine cut into pieces, each having a rooted cutting on it, and the plants are ready for planting out.

I should have stated that the proper season for performing all of these operations is at budding time, sooner or later in the summer, depending upon the tree to be operated on. The grape cuttings should be cut in the fall or winter, and kept in a cool place in sand or moss until the first flow of sap is over, in the growing vines, when they may be inarched.

[We should be glad to have Mr. Adair's improvements thoroughly tried. If, in the case of the vine, the union should be a permanent one, a point will have been gained. There will then be an old vine furnished with scions at intervals, beside the rooted plants in the ground, and this seems to be more than Mr. Adair claims.—ED.]

THE ROSE-SLUG.

BY A. VEITCH, NEW HAVEN, CONN.

"If you will publish something that will save my *Roses* from the deliberate slaughter of these murderous pests, which have nearly destroyed my large and choice varieties of beauties, I shall deem the information cheaply purchased by paying for half a dozen copies. Tobacco, and smoke, and sulphur, and lime, and plaster, and woman's tears, and men's imprecations, are alike harmless to exorcise those miscreants which 'plague mankind.'"*Horticulturist*, 1860, p. 443.

By the rose-grower the slug is justly considered as one of the most obnoxious pests he has to contend with; and if not carefully guarded against, it is sure to blast the hopes and high expectations he may have cherished all the winter long, of the pure and unalloyed delight in store for him during the rose season, when every bush, the picture of health and careful cultivation, is heavily laden with beautiful buds and magnificent full-blown flowers. But often, alas! when such hopes are about to be realized, it can only be said,

"The spoiler came; and all thy promise fair
Has sought the grave, to sleep forever there."

There does not seem to be any thing in the case, however, so discouraging as to deter him from persevering in his delightful employment, as the means of prevention and of cure are within the reach of persons of moderate means. Not to say any thing of timely applications of whale oil soap and Gishurst Compound, which latter composition, by-the-by, is a very certain remedy, we have another to propose, which may appear ridiculous to some from its simplicity; yet still, upon the testimony of competent witnesses, it can be vouched for as a complete preventive and an effectual cure. It is simply *pure water*: but water mechanically applied.

A box sufficiently large to suit the requirements of the establishment where it is to be used, mounted upon a four-wheeled carriage, and a force-pump attached, with rubber hose, say eight or ten feet in length, is what we have seen used with the most satisfactory results. In regard to the mode of operation,

the bushes ought to be syringed twice or thrice a week, from about the middle of May until about the middle of July, when the slug season may fairly be considered to have closed. But even with this mode of treatment, it need not be wondered at if some make their appearance upon solitary bushes. Should they do so, all that is necessary is to apply as much power to the pump as to be certain of the water reaching every part of the plant with force enough to drive them away; and that can easily be done, as, with the hose sufficiently long, the operator can get at them on every side, and under the leaves as well, which is of the utmost importance, as it is there chiefly the depredators ensconce themselves for safety. As a precaution against permitting the fallen enemy from regaining his lost position, it is well to rake the beds as soon after each watering as practicable, as by this means their destruction is made doubly sure.

In addition to keeping the plants free of slug, it will appear evident that other benefits are conferred, for which they will not be ungrateful. A regular supply of water is highly advantageous to roses during the early part of summer, especially in situations where the soil in which they grow is light and sandy. In ordinary cases, however, it is safest to water with a gentle hand, as the young foliage of roses, as well as other plants, suffers greatly from every kind of rough treatment. This will appear evident to any one the least acquainted with the structure of leaves, whose innumerable stomata and delicate external coverings, plead, and plead earnestly, for far other treatment than they often receive.

However simple the method herein recommended may appear, no harm can be done by giving it a trial. Should your last year's correspondent be one of those, you, Mr. Editor, would not hear any more complaints from him of disappointment and grief at the destruction of his favorites.

[Here is a very simple and practicable method of treating the slug, not only for our correspondent, but for all others: a remedy "without money and without price." Let it be tried. We have no doubt that the Gishurst Compound will also be a certain cure.—ED.]

APPLES—ARE THEY RUNNING OUT?

BY C. W. G.

We hear much of the deterioration of varieties, and even of their entirely running out and failing altogether. And, again, we hear much of trees suited to one locality or district, and not to another. Of the former, in the sense in which it is generally taken, we have no belief. In the latter we have, in a restricted sense.

To illustrate with a very marked instance, we will take Rawle's Jannet, which puts out its leaves very late in the spring, and is so late in flowering, and consequent maturing of its fruit, that it is unfit for a northern latitude. On the contrary, we believe most of our standard varieties will sustain their high character throughout the apple-growing region north of the thirty-eighth parallel. We must here admit that in many localities we find local seedlings of almost equal value to the general standards, and in these Connecticut, and perhaps Ohio, stand pre-eminent. But the fact that we wish to state is, that

for premium, for the twelve best varieties of fall and winter table varieties, we have found nearly the same kinds offered in Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, and Iowa. These are complete or *perfect* varieties, and under good treatment will prosper in every place within the specified limits in which any apple trees will thrive. Our observation, which has been pretty extended, and, we think, accurate, leads us to the belief that proper treatment is necessary for their perpetual prosperity in almost every locality; and the exception is so rare, that we are almost disposed to make the assertion general. For the soils which constantly sustain vigorous trees in their full production of fruit, must be referred to those rare formations of drift or alluvium which have a good elevation; bottoms and lowlands not affording the conditions of prosperity. Wherever we have found the apple failing or running out, natural conditions being favorable, we have found defective preparation before planting, or exhaustion of fertility in some obvious form, sufficient to account for all deterioration. On the other hand, we have seen the poorest soil, or that the most completely exhausted of its fertility, by generous preparation giving growth to the most healthy, thrifty, and productive trees which we ever beheld. The condition of the soil before preparation has much to do with the cost of preparation, of course; but the case is rare in which considerable preparation is not required to maintain perpetual productiveness. Seek out the general want of the fruit, and supply it, and special wants will be few.

We shall recur to this at another opportunity, with some special considerations.

[The above, from an old and experienced pomologist, bears directly on a subject which has at times been productive of much discussion. It is to the point. We have heretofore expressed our conviction against the idea that our old favorite apples are "running out."—ED.]

AMERICAN SHADE TREES.—NO. I.

BY C. N. BEMENT.

AMONG all the materials at our disposal for the adornment of country residences, none are at once so highly ornamental, so indispensable, and so easily and completely manageable as trees; and our resources in that respect are surprisingly great. We introduce them into the landscape—in the foreground as well as in the distance, on the tops of the hills, and in the valleys. They are, indeed, like the drapery which covers a somewhat ungainly figure, which, while it conceals its defects, communicates to it new interest and expression.

Trees, in their many forms, are one of the greatest sources of interest and character in landscapes. Variety, as a source of beauty, is created in a wonderful degree by a natural arrangement of trees. Airy and delicate in its youth, luxuriant and majestic in its prime, venerable in its old age, the tree constitutes in its various forms, sizes, and developments, the greatest charm and beauty on the earth in all countries.

Nothing is so attractive to the traveler as fine country residences; and how much might be added to the appearance of many, indeed most of our farms, if proper attention were paid to the planting of shade trees in their

appropriate places. They are something for the eye to feast upon; they please the imagination, cheer the heart, and bring with them all the associations of happiness. Sociality, refinement, and learning follow in the train of rural improvement. Nothing contributes, in our estimation, so much to the pleasantness of a place as the presence of trees; and surely no luxury of half their value can be procured for the same price. Springside owes a great share of its beauty and attractiveness to its shade trees.

No person claiming any pretensions for the beautiful in nature, could fail to notice, on visiting the beautiful village of Pittsfield, Mass., the tall, majestic elm, the monarch of the forest, the pride of the inhabitants, (who almost worship it,) standing in the center of the square, lifting its umbral branches on a trunk sixty feet to the first limb, and can be plainly distinguished for miles, towering above buildings and highest trees, surrounded by mountains and lofty hills, on a plain stretching from north to south, as far as the eye can reach, and from east to west to the mountains, situated in opposite directions; these hills and mountains are covered with deciduous trees, while on the plain itself, which is watered by the bright, sparkling Housatonic, the sycamore, the maple, and elm flourish in great abundance.

The country house that has its shade trees, its shrubbery, and flowers, has hallowed memories to win back the hearts of its wanderers, and brighten its gloomiest hours. The woman who fails to have a green spot and shade at her door, fails in one part of her mission! Her house will not be so endeared to its inmates as it otherwise would be! True, the outside decorations should chiefly belong to man's labor; but very many, we are constrained to say, will not plant a tree or shrub, who could be taught to love them, and add to them, if some one would begin. So, boys, go ahead; plant trees. Do it at once, or, at least, during the proper season. Do not delay it from year to year. Do not procrastinate until you have no time to plant a tree, shrub, or vine. Make a resolve, and carry the resolution into effect, that two trees at least shall be planted every year for each man, woman, and child on the farm. Recollect that handsome trees, judiciously planted, not only advance the beauty, but add greatly to the value of farms. Take, for instance, two farms of equal size and quality; let one have shade trees well located, while the other is bare of all these glories; put them up at public sale, and our word for it, the one with ornamental shade trees will command an advance of more than five times the cost of planting and attending to the trees.

A writer in a late number of the *Rural New-Yorker* sets forth our views so truthfully, we can not resist copying it: "Indiscriminate destruction of trees and shrubbery has generally characterized the clearings of our woodland pioneers. Many 'old settlers,' who once classed wolves and trees in the same category of extermination, have lived to mourn for their unwise course, and to endeavor to atone for their early folly by planting trees and shrubbery to supply future generations with the shade and ornament which might have been preserved while clearing around the house and farm.

"The comfort and value of a homestead and farm embellished with trees and shrubbery, contrasted with the desolate appearance of premises without such embellishments, furnish lessons that should not be neglected while clearing land. In the mere dollar-and-cent aspect of the case, few things will 'pay' better than attention to this matter."

No element of beauty is so completely manageable as trees; and when judiciously planted, not only advance the beauty, but add greatly to the value

of the farm ; they give a beautiful aspect to the homestead, and furnish, without direct expense, for the feathered minstrels a summer orchestra, cheering the heart, and delighting the ear of the lover of birds' songs.

Situated as we are, in the middle of the temperate zone, we have the best of the deciduous trees—the Oaks, the Elms, the Maples, the Beeches, the Birches, the Ashes, the Hickories, the Walnuts, the Cherries, the Chestnut, the Linden, Sycamore, and many others, of the temperate regions ; together with the finest evergreens—the Pines, the Firs, the Spruces, the Hemlock, the Hackmatack, the Cedars, the Larch, and the Arbor Vitæ. Each one of these trees has its own peculiar and distinctly marked character, recognizable at a distance, and producing an effect which needs not to be mistaken for that of any other. Each has its own cycle of change, its own time of flowering, and of perfecting its fruit, and of opening, maturing, changing, and casting its foliage. Each has its own shape and its own color, distinguishing it from every other tree, even of the species most nearly allied. Hence the endless variety of forest scenery.

The numerous trees, and still more numerous flowering shrubs, which belong to our forests, all capable of being made to flourish freely in every part of the state, give the planter who is studious of the effects of landscape, inexhaustible resources. Some of the trees grow habitually to the height of only thirty or forty feet ; others rise to seventy or a hundred. Judiciously grouped in planting, they are capable of giving to a level lawn or plain the appearance of any desired inequality of surface. The tall Pines, Elms, Linds, and Locusts at a distance will seem to occupy a hill ; the Maples and Hickories, broad Oaks and spreading Beeches, will form the grandest descent to the plain. Among these, a winding path leading under or near the largest trees and behind thickets, may give to a few acres all the advantages of variety of a large forest.

It is surprising how small is the number of trees necessary to produce a striking effect. Ten or twelve trees, fortunately or skillfully disposed on the sides of a hill, are often sufficient to give an air of richness, harmonizing perfectly with a highly cultivated country. The happy effect of three or four trees on an island gives an agreeable relief to the eye. A single tree by a farmer's house protects it, and gives it a desirable air of seclusion and rest—as it must be the residence of contentment. One almost covets a house so pleasantly sheltered ; while an unprotected, solitary house, seems to shiver in the north wind, and we involuntarily wish for its inhabitants a more cheerful home. Why should not at least one tree be found growing near the dwelling of every man, even the poorest and the humblest ?

In a country so much exposed as ours is, in consequence of the remarkable clearness of the atmosphere, to the burning heat of the sun, the use of trees for shade is not one of the least important. This use is closely allied to the last. A tree which furnishes a cool shade to the inhabitants of a house, is at the same time, and on that account, its best ornament. At the season when men travel for pleasure, a plain, low, modest house, with open grass plot in front before it, shaded by an Oak, Elm, or Linden, speaks more for the feelings, and is more beautiful than the showiest house unprotected from the sun. The traveler in a hot day welcomes every tree on the roadside. Even a thin fringe of white birches looks pleasant ; and he remembers thankfully the kindness or good taste which has spared or planted a tree with a head broad and thick enough for him to rest under and cool himself.

SELECTION OF TREES.—The associations with the beauty of trees about our rural homes enter deeply into the best elements of our character; and we hope that what we have written may induce some of our readers to plant trees, for the purpose of increasing the beauty and the appearance of seclusion and quiet of the homes of their wives and children. The object, however, of this communication is for those who live on farms, who have few books and little leisure. It will accomplish the purpose for which it was written, if it awaken them to a deeper sense of the value of some of the blessings by which they are surrounded, and lead them, or any of them, to resolve to preserve the old trees and plant new.

The immense variety, the many and important uses, and the great beauty of our forest trees, must naturally attract the attention of an observer; and as the preservation and improvement of our farms and the country, on a system wisely begun and long continued, not by one, but by many men, not in one village or town, but in a county or state; it is wise in not acting merely for the present, but in extending its forethought generations onward, making its knowledge and wisdom an invested capital for coming generations, what they, when looking back, shall wish it had been done for them.

THE ELM.—The American Elm is, in most parts of the Eastern States, the most magnificent tree to be seen, and, probably, the one most cultivated, with the exception of the Maples, for shade and ornament. It affects many different shapes, and all of them beautiful. They are all long-lived trees, with hard wood, consisting of twisted and interlaced fibers, alternate, deciduous, harsh, serrated leaves, inequalelate at base.

The single or compound plume is represented by trees stretching up in a single stem, or two or three parallel lines, to the height of seventy or even a hundred feet, and spreading out in one or two light feathering plumes. Of this character is the tall patriarch tree that stands alone on the common in Pittsfield. Many specimens of this form may be found in both Massachusetts and Connecticut, where the tall, primeval forest has been cut away, and the Elm alone has been left standing.

The character of the trunk is almost as various as that of the general form of the tree. You sometimes see it a straight, gradually-tapering column, shooting up to sixty or eighty feet, without a limb; at other times, an inverted small branch or two, pushing out at the fork, hangs waving downward for some feet. Again, you see it a verdant pillar of foliage, feathering from the branches to the ground.

With this endless variety of beauty, is it wonderful that the American Elm should be the greatest favorite with the New England people? And it has the additional recommendation of retaining much of its beauty when the foliage is gone. The sturdy trunk and the airy sweep of the branches are always there, and few objects of the kind are more beautiful than the feathered alternate regularity of the spray upon the outermost and uppermost boughs. With the earliest spring, these are fringed with numerous bunches of red blossoms, soon to give place to soft, delicious green of the young leaves.

Coming with such recommendations, the Elm is more frequently transplanted than any other forest tree, with the exception of the Maples, and, from the vigor and number of its roots, it is more sure than any other to live. It is oftener spared, too, in most parts of the country when the rest of the forest is to be cut away. We frequently, therefore, see it standing, for a shade to cattle in pastures, and by fences, and sometimes in mid-field, on tilled lands,

or left to shade and protect, and give an air of comfort to farm-houses. And in the excellent practice, becoming every year more common, of ornamenting towns and villages, and sheltering sunny roads with rows of trees, of trees, too, which, much as we value the Elm, we can not but consider its equals and often its superiors, the Maples, the Lindens, Birches, Beeches, and even the monarch of the forest, the lordly Oak itself.

The Elm grows in almost any soil, but never attains its loftiest elevation except in rich, moist ground, such as is found on the banks of rivers. In such situations, it has so rapid a growth, that one who has planted it may live, without passing beyond the ordinary age of man, to see it become a magnificent tree. It is very tenacious of life, and bears transplanting of every size, from five to six and even twenty feet.

[Mr. Bement is an ardent lover of nature, and he will be found to speak warmly in praise of his favorites. He has said none too much of the Elm, one of the stateliest trees that any country can boast of. His article will be continued.—ED.]

FERNS—REMARKS UPON.

BY DANIEL BARKER, SPRINGFIELD, MASSACHUSETTS.

“FERNS,” or “filices,” (so called from their beautiful forms,) have many claims on public attention, and it is very gratifying to know that all those who have any pretension to good taste in matters pertaining to gardening are beginning to recognize their great beauty. The day is not very remote when Ferns will be considered as among the most indispensable of plants to give effect to and grace the scenery of the garden, as well as for the green and hot house.

Not only are they becoming objects of peculiar interest to the amateur and florist, but equally so to the landscape gardener. This assertion may cause some to doubt whether plants of such humble growth, and withal so common, can be brought to bear any part in and give effect to any scene created by the landscape gardener.

Within a few years, or since what is called the natural style of gardening has become fashionable, the cry of the landscape gardener has been, Imitate nature. If, then, this maxim is to be carried out, let us visit the beautiful wilds of nature with which this country abounds, and there *study* the effect produced, not only by the giants of the forest, but by every tree and shrub, ay, by every prostrate plant, however humble its pretensions, and lest they should not arrest our attention sooner, let us take particular notice what part our humble but beautiful ferns bear in our wild woodland scenes. I fearlessly assert, that no one with any pretensions to good taste in landscape gardening can visit such scenes, and therein read nature’s volume, without receiving many useful and important lessons, such as *can not* be attained in any seminary or college in existence. While visiting any fern-clad vale, and surrounded by their elegant forms and fragrance, let us decide whether they are not fit and proper subjects to add grace and beauty to any scene adapted by nature, or otherwise, to their requirements.

Ferns are ill adapted for any *fantastical display*; for such a purpose they are entirely out of place. If, then, we are to imitate nature, let not this be overlooked. If, on the other hand, we use our beautiful native species for the decoration of those portions of our gardens where they are not out of place and character, they will be found to add a charm and elegance to the same, and without them a *deficiency* must exist.

But to enter into details upon their adaptability for the adornment of the landscape is not my present purpose. My object is to notice some of the more prominent species and varieties, with their modes of culture in the green and hot house, portable plant-cases, and the rookery.

I will commence my remarks with a few of those which require the temperature of the green-house, prominent among which is the *Scolopendrium*, or Hart's Tongue, *Scolopendrium vulgarum*, *Scolopendrium officinarum* of Swartz, *Asplenium scolopendrium* of Linnaeus, *Phyllitis scolopendrium* of Newman. In a quaint old herbal, bearing date 1597, Gerard tells us that decoctions made from this fern "doth open the hardnessse and stoppings of the spleen and liver, and all other griefs," etc. At the present day, it does not figure in any of our pharmacopeias. It is a beautiful evergreen Fern, a native of Britain and this country. It is said by Wood to grow upon shady rocks at Chittenango, New York, to which vicinity it appears to be entirely confined, which is remarkable, inasmuch as it is very soriferous, and very distinct in its character.

In its native habitat throughout Europe, in dry and rocky locations, it grows small, not more than from six to eight inches in height; but in low, damp places, ravines, etc., its fronds may be frequently found from two to three feet in length, drooping from the rizoma in the most elegant and graceful curves. The treatment of the genus *Scolopendrium* is very simple: a soil containing an abundance of vegetable matter, such as decayed wood leaves, etc., with about one fourth of loam, with plenty of drainage in the pots, placed in a very shady part of the green-house or fernery, with a damp atmosphere, it will grow luxuriantly, and soon become a magnificent object, equaling in beauty the much-admired Bird's Nest Fern, *Asplenium nidus*, a native of New Holland.

I am unacquainted with any Fern that has sported so many and elegant varieties as the *Scolopendrium vulgarum*, some of which are of the most extraordinary and beautiful characters imaginable, altogether unlike the original species. It is most interesting and instructive to witness the different forms they assume under cultivation. There are upward of sixty varieties which have received names, many of which are exceedingly variable, while others are quite permanent in their developments, and can be reproduced by spores, which they produce in countless millions. A few of the most beautiful of the varieties are as follows:

Scolopendrium Crispum.—One of the most interesting and beautiful. The two edges of the frond are elegantly undulated, (*crisped.*) This variety is very constant under cultivation, but I have never found it in a soriferous state.

Scolopendrium Crista Galli.—A very beautiful variety. The lower portion of the fronds are much like the species, but near the ends they burst out into a reduplication of folds something like the cockscomb. It remains constant in cultivation, and is soriferous.

Scolopendrium Proliferum.—A most interesting variety, seldom exceeding three inches in height; one of the very best for growing in the portable plant-case. Unfortunately, it is rather scarce.

Scolopendrium Polyschides, (Angustifolium.)—A very elegant narrow frond variety, seldom exceeding ten inches in height. It is quite constant under cultivation, and is soriferous.

Scolopendrium Ramosum Major.—A strong-growing variety, closely approximating to the normal form. It remains constant under cultivation, and is soriferous.

Scolopendrium Polyschides Nivo.—Of a more humble growth than Poly-schides, producing viviparous bulbules upon the upper surface of the fronds, which ultimately become plants. It is constant under cultivation, but I have hitherto failed to discern any sori upon any specimens which have come under my notice.

Scolopendrium Dædalem, (Digitatum.)—Close-tufted habit, very fine.

Scolopendrium Crenatum Lobatum.—Fronds deeply crenated: fine.

Scolopendrium Marginatum.—A deep green and fine variety.

Scolopendrium Submarginatum.—One of the most graceful and beautiful varieties: rare.

Scolopendrium Vulgare Laceratum, (Endivaefolium Crispa Major.)—A compact, dense-growing variety, with beautiful crisped fronds.

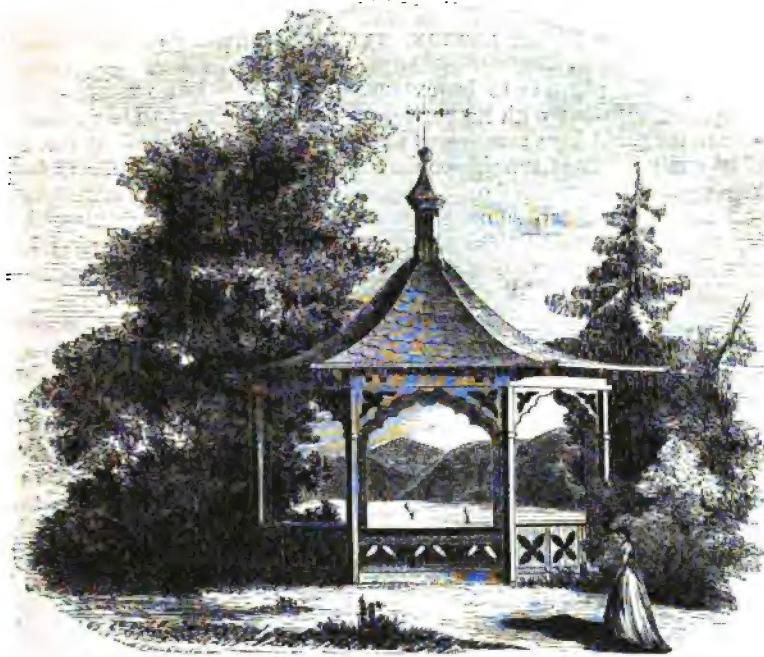
[It is only of late that the availability of Ferns, etc., for ornamental purposes has been to any extent recognized. Mr. Barker has pointed out some of the uses to which they are adapted. We would call attention to them as especially suited to plant-cases for rooms. We can think of no more beautiful object for a parlor.—ED.]

PINK AND PICOTEE.

(See *Frontispiece*.)

BY THE EDITOR.

We have selected for our present *Frontispiece* two very beautiful flowers, a Pink and a Picotee, both taken from *Turner's Florist*. They are both new, and rank as first-class flowers. They afford striking evidence of the improvement which has been effected in this class of flowers during recent years. We have in preparation a plate of American seedlings, which we shall present for the purpose of comparison, as well as to show what we are doing here. It is now considered indispensable to a first-class flower that the outline should be circular and the edges of the petals smooth, and the specimens in our plate come quite up to the mark. The Pink was raised by Dr. Maclean, one of the most distinguished amateurs in England. It is described as "reddish purple, broad belt of color, very smooth in the edge, large petal, medium-sized flower" and well deserves its name of *Beautiful*. The Picotee was raised by Mr. Kirtland. It is named the *Rev. H. Mathews*, and is what is called a rose-edged Picotee. It is distinct from another of the same class named *Rev. A. Mathews*. A writer in the *Florist* thinks the coincidence of names unfortunate; we think as much. It is, however, a beautiful flower, and will no doubt find its way among us. The color is white, petals large, edged with rose, smooth on the edge. It is a good and constant bloomer.



DESIGNS IN RURAL ARCHITECTURE, No. IX.—AN OPEN PAVILION.

BY GEORGE E. HARNEY, LYNN, MASS.

WE offer at the present time another of the series of designs for simple out-buildings for the adornment of country places.

Our series thus far has included two summer-houses for shady corners of the lawn, an observatory for the rocky bluff, and a pump-house for the yard. We now give a view of an open pavilion, appropriate for a high, prominent situation commanding extensive views, such, for instance, as many of the estates on the banks of the Hudson afford. It serves here the same purpose as the observatory, though the latter—as the design in the October number of the *Horticulturist*—is more suited to a rocky eminence hedged in by evergreens and other picturesque trees, while the former, being of a more open, sunny character, would look best on the verge of a graceful sweep of lawn, in the midst of *beautiful* rather than *picturesque* scenery.

The pavilion is octagonal in form, measures twenty feet across, and the interior is surrounded by seats. The roof is of the *ogee* form, and might be surmounted by a vane, a useful as well as an ornamental feature.

There being no intricate detail work, the construction of this structure is very simple, and it can be executed by any ordinary carpenter at a small expense.

RUBUS LACINIATUS.—(JAGGED-LEAVED BLACKBERRY.)

BY WILLIAM LAWTON, NEW ROCHELLE, N. Y.

If this beautiful plant is to be extensively cultivated in our fruit-gardens, and our market supplied with its berries, or even if confined to the grounds of the amateur, it should have some short and appropriate name, expressive, if possible, of its quality. The flavor is peculiar: it partakes of the Raspberry enough to make a marked difference from any of our Blackberries. It is so sweet as to be almost mawkish to some palates, while others are much pleased with this very peculiarity; and I think it may properly be called the Honey Berry, or Honey Blackberry. At all events, it will occupy a portion of the grounds of every discriminating amateur, in consequence of its several desirable qualities, and will be no less valued for the beauty and permanency of its foliage than its abundant yield of delicious fruit; for hedgerows it will present an impassable barrier, to be kept up at a small expense, and giving rich returns for all the labor bestowed upon it. When firmly rooted, each plant may be considered as permanent as a grape-vine; no suckers are thrown out from the roots; but, during the summer, long, trailing shoots are produced from the stock near the ground, and these the ensuing summer bear an abundant crop; after which the sap is no longer elaborated, its branches become desiccated, and may be removed in the autumn or spring.

Considering that the plant is as permanent as any tree or vine, I should recommend the same preparation of the ground as for favorite grapes or most valued trees. My plants were, fortunately, set in garden ground trenched more than two feet deep, and highly manured. They can be trained upon a trellis or an espalier, or left to run upon the ground, or upon a stone or other fence adapted to the purpose. The growth of a single season, when the plant is three or four years old, is sometimes fifteen feet or more. These shoots are like a large whip-lash, tapering to the end, with many laterals. In regard to the best method of propagating this plant, nature points out one that can be readily practiced: cover the ends of the trailing branches with two or three inches of earth, after they have about finished their growth, say at midsummer, and they will be found firmly rooted in the autumn; the main branch may be separated and spread upon the trellis, or regulated in any way for fruiting. Virgil refers to the Blackberry as a trailing shrub teaching the art of layering. Where a few plants only are required, this beautiful suggestion of nature should be followed, as the most convenient and inexpensive. But the triumph of art for extensive cultivation is by root cuttings; these can be placed in a hot-bed early in the spring, and placed in pots or the open ground as soon as a stem and leaves are fairly formed. I do not think it can be propagated by cuttings as practiced with so many plants, but hope to be far better informed in regard to the nature and value of this "Honey Blackberry" at the close of another season, and shall be happy to communicate to my friend Mead all I can learn upon the subject, or to take instruction from him, if he will visit my grounds at the proper season.

From the peculiar flavor of the fruit, I should be induced to think this Blackberry is an accidental cross with a Raspberry. I hardly think it can be of French origin, but I am trying to search the matter out, and will let you know the result.

[Do so; we will try to help you, and let you know our mode of growing the plant.—ED.]

GRAFTING THE GRAPE VINE.

BY C. W. GRANT, IONA ISLAND, N. Y.

DURING the past twelve years my statements of the success or failure of attempts to graft the vine have appeared in the horticultural journals, but the precise conditions of success have not yet been clearly pointed out. A few operators have been so generally successful that they consider failure the rare exception to the rule; but the instances of general or entire failure have been far more numerous.

To state the conditions of success in brief, I would say, the stock and scion must be brought together under circumstances favorable to vegetation, with the stock actively disposed to form granulations, and the scion disposed to the formation of callus at the same time. The bud of the scion will soon shoot forth, and if not protected from the hot sun or drying wind, will probably soon perish. After the inosculation of callus and granulation, vegetation goes on in the rapid formation of shoot for a considerable time before a union takes place, during which time the shoot has not much power of endurance, and can not be left unguarded with safety. Even at the end of a season, and after vigorous growth has been made, the union is often slight. The motion of the watery sap of the vine (for sap we will call it) is often very energetic, and pushes forth its shoots before it carries enough nutriment to add to its incipient root, or form granulations on a mutilated part.

If, under these circumstances, the operation is well performed, the bleeding will go on through the scion, which will shoot, and appear to grow for a season, and the new operator will entertain no fear as to success; and if the season is warm and dry, and the stock and graft are both in perfect condition, there is some ground for hope, in proportion to latitude and climate. The operation which will succeed at Cincinnati will fail at Cleveland, in the hands of the same operator. If the season should be cold or rainy, the water will continue to flow, and no granulations form. To obviate this, the operation is deferred until the season is advanced, and shoots have put forth to the length of three or four inches. The scion for this purpose must be kept back, so that the bud is swelling, but not pushing. If the conditions already named are satisfied, and if the stocks are good healthy Isabellas or Catawbas, the operation will generally succeed; but the further north, the more advanced must be the shoot, often to the time of inflorescence.

The conditions favorable to success are fine healthy stocks of Catawba, Clinton, or Isabella, &c., with vegetation so far advanced that cambium is beginning to form, or at least ready to form, so that bleeding will scarcely occur, or will cease soon after the operation has been performed. It is not that the bleeding in itself defeats the operation, unless it should be very long continued as well as very profuse, but because while it continues no granulations for uniting with the scion will put forth. It is true that continued bleeding will either prevent or destroy the callosity of the scion. Therefore I have said the action of each must be ready to meet the other. The stock must be active, and the scion, although kept back in a cool place, must at

least be excitable; and the shock of transfer to a growing temperature must not be great. One bud is enough for each scion; and if the stock is pretty large, or an inch or more in diameter, two may be used.

The soil should be removed to sufficient depth to enable the operator to cut the stock below the collar and surface roots, if such have been suffered to form, so that in the first place the difficulty from the formation of shoots from the stock will be chiefly avoided, which is important, as the disposition to it will be very active, causing the failure of the operation. In the second place, it should be so low that the graft may send out its own roots, and thus insure permanence to the new vine, which will otherwise be of doubtful duration. Much more accuracy of fitting is required than for the apple or pear, and the usual injunction to have a sharp knife skillfully used is here particularly in place.

The work should be so well done that tying will not be required for the apposition of the parts, and that there shall be no springing apart after the ligature (which should be of bass) has decayed; still the tying should be stringently done, and so as to remain in full force for several weeks, as the union will not take place without strong and continued pressure. Under some circumstances, a young, healthy, well-planted vineyard may be advantageously converted into one of another variety, and one year of time gained by the operation; but plants on their own roots would be far preferable; and although it is one of the oldest operations that is accurately described by writers on the vine, it is but little resorted to by skillful vineyardists, not having been found advantageous.

The utmost advantage promised is small compared with that certainty obtainable on trees like the Apple and Pear, which require a long period to bring them into full heading. A thrifty Apple tree of twenty or thirty years' age, of undesirable variety, may, by grafting, be transformed into one of the kind desired within six years, and the new head, by this time, be able to bear a half crop, or from two to four barrels. A young tree from the nursery would require more than twice this time. The old tree would almost immediately give some good fruit, better in quality than could be obtained from a young tree under five years at least. A well-planted vine, under good treatment, will give good specimens the second year, or even the first, and a delightful crop the third. From the fourth to the sixth, according to the system adopted, it may become well established and in full bearing, under such favorable circumstances of planting and culture as the greatest amount of care and expenditure could not give to an old vine, but without which, if all else has been successful, its produce will be unsatisfactory.

I have not spoken of grafting the branch above ground. A few words on that will suffice. It may be as readily done as below ground, and with nearly the same prospect of success, but can scarcely be hoped to be enduring, unless a new vine is made of it by layering, so that the utility of the art will be diminished, except in particular cases.

If the grafting is done below ground, no cementing is needed, and the cleft or splice mode may be chosen, according to convenience. The fitting is always supposed to be well done, and the fine, permeable soil somewhat compactly replaced, and the shading by no means omitted. Some stocks in the open air will form no granulations, and no operator will succeed with them. If there is great natural dissimilarity in the texture of the wood, the union will be reluctant. Delaware will join with Clinton so that close observation is needed to discover the junction. In the propagating-house no fear is ever entertained

as to the result; and it may be remarked, the scions that are well grown in the propagating-house will grow when those which are produced in the open air will fail. The perfection of the wood secures the result in one case, and want of it causes failure in the other. Imperfectly ripened wood from deficiency of climate, or numerous other causes, often defeats the operation. A frame and sash will, under good management, secure success in grafting the vine. It must be remembered that the vine has a repugnance to a union with a foreigner even of the nearest affinity, and will make great efforts to do its "upper air" work with its own apparatus, rejecting, if possible, that which is thrust upon it. The young shoots, which will generally start in profusion, must be watched and removed before they appear above ground, or at least at their first appearance. If their leaves are suffered to expand, the action is fatally turned from the graft.

For the amateur, an operation of skill and beauty, and, withal, to test his dexterity and skill, may be performed in the summer—the last of June or beginning of July. A piece from a fine healthy cane of last season is taken, of which a shoot of short-jointed wood of the current year is growing, perhaps having made a length of eighteen inches. This shoot is cut back to one large leaf, which will have a well-developed bud at its base, and also a lateral, which must also be shortened to one leaf. The portion of old wood taken may extend from an inch and a quarter to an inch and a half above and below the current year's shoot. Half of the wood opposite the shoot is to be taken off by splitting in the middle. On the vine which is to receive this, have a cane of last season selected of equal size, and from which a piece carrying a shoot is to be removed to receive that already prepared. Accuracy of fitting, as well as rapidity of performance, is required to insure success. The piece must be firmly bound to its place by slips of bass. It must then be surrounded with moss, securely and neatly tied, which is to be kept moist for a few days, until union has taken place. It must also be shaded by a surrounding of paper, secured by tying above and below.

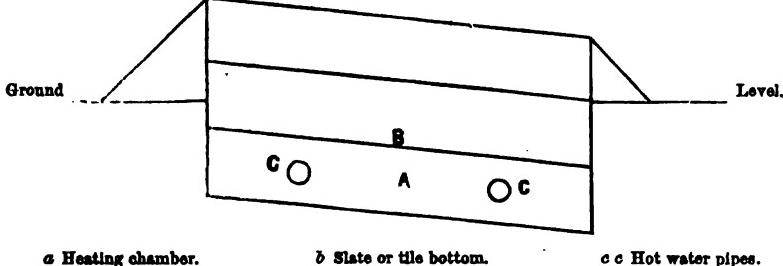
The cane is now to be cut off immediately above the first shoot above that on which the operation has been performed, and the shoot above shortened to two or three leaves. This shoot is to be entirely removed after the graft has begun to grow strongly. The opposite dangers to be guarded against are first, attempting it too early, and before the new shoot has sufficiently advanced in the formation of wood and development of buds; for next season's buds are called upon to do the growing; second, to avoid dangers from immaturity of wood by lateness and consequent weakness at the end of the season. Budding may be performed successfully, so far as growing of the bud is concerned, but is an operation of no value except to the curious.

Grafting of the vine is much less extensively applicable with advantage than the grafting of trees, from other causes than those mentioned. The stock chosen are often unsuitable; if of the wild vine, for want of similarity of structure. One of fine texture, like the Delaware, will form a lasting and happy union with one that is coarse and dissimilar. One that has lost health and vigor will not have it restored by grafting, and one that has been badly planted will suffer from the defect much more decidedly than before; and in such cases, when the ground is already occupied by hungry roots, the remedy by layering, which is easily applicable when young stocks are used, is inadmissible because the first possessor will keep it filled with its own roots, despite their frequent removal. Grafting an old vine is, under the most favorable circum-

stances, but a temporary expedient, which will, after all, be not fully satisfactory; and the same care and skill, if expended upon a well-chosen new vine, will not only build up a new status which will be perpetual, but will yield by layers judiciously taken a remuneration for the past and revenue for the future. Albeit, I do not advise the taking of layers from choice fruiting vines; in the first place, for a reason of my own, which I will not divulge; and in the second, because it will take proportionately from its productiveness, and much more than proportionately from its size and beauty, as well as from the quality of the fruit.

Just as I am about to conclude, the HORTICULTURIST, with the communication from El Medico, comes before me with his long chapter of failures, in answer to which I am able to add very little. I have for many years been conversant with the "old German" vineyardist of whom he speaks, and have repeatedly witnessed his success and that of his Cincinnati neighbors in grafting. To have the scions of *well-ripened*, but not gross wood, is a point indispensable to success which I have omitted to notice; and wood that has been well grown in a house is greatly to be preferred, as it is for all propagating purposes. I hope these hints will furnish El Medico with suggestions of all the important conditions of success, as well as dangers to be avoided.

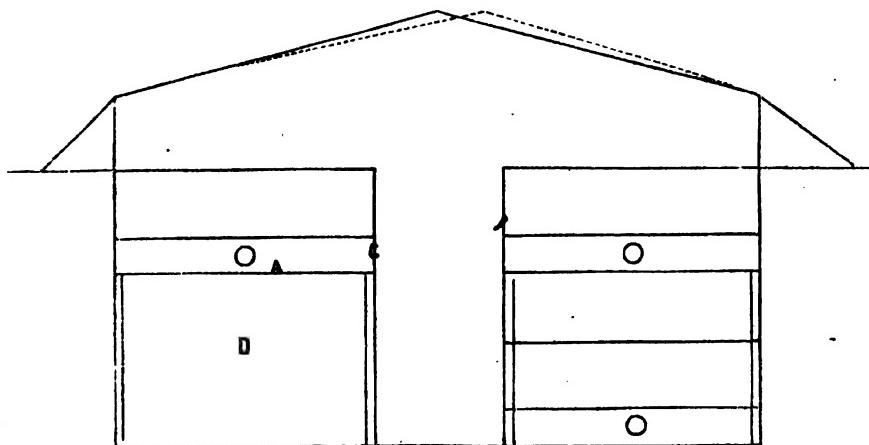
[There, El Medico, you have the philosophy of grafting the grape. If you and others master the principles upon which success depends, the application of the different modes of performing the operation becomes greatly simplified. Let us know how you like it, and whether you would like to have the *modus operandi* illustrated with cuts. We take it for granted that you, in this matter, represent a large class of our readers. You will also find something to your purpose in Mr. Adair's article. The Doctor, we are glad to see, has adopted our word "vineyardist." Though not in the dictionaries yet, it has the merit of being regular in its formation, and is concise and expressive.—Ed.]



H O T W A T E R B E D S .

BY BROOKLYN.

As the season for these approaches, I beg to suggest the use of water ones to gardeners. Dung hot beds are troublesome, especially those required in action for a length of time, as fruiting beds for melons, cucumbers, tomatoes,



a Board bottom supported upon joist uprights and cross pieces.

&c. I think the double arrangement best, as it possesses the advantage of being workable in all kinds of weather. The spaces, *d*, of course need not be excavated unless desired; but I think it best to do so; they can be used for growing mushrooms, sea kale, rhubarb, or asparagus, without bottom heat; or, by running the return pipe around again, can be turned into forcing beds for the same.

. There should be slides in the edge of the heating chamber *c*, to open at night or in bad weather, to equalize the top and bottom heat.

[The above suggestion is a good one. We have put up and are putting up hot-beds on about the same principle, the difference consisting chiefly in the mode of heating; and in this respect the difference is small. To those who can afford the first cost, the arrangement is a good one, and will prove satisfactory. To others, we recommend the excellent plan of making hot-beds described elsewhere by a "Jersey Market Gardener."—ED.]

MORE ABOUT MR. LAWRENCE'S ORCHARD HOUSE.

BY DR. GEO. PEPPER NORRIS, WILMINGTON, DEL.

In the August HORTICULTURIST I find I have written, in describing a visit to Mr. Lawrence's houses, thus: "Here are to be seen peach trees growing in wire baskets, surrounded with moss, and trained in every imaginable shape." To this assertion I find a "Close Observer" has taken exception. I certainly did see peach trees growing in wire baskets, surrounded by moss, and that there should be any thing extraordinary in that statement I can not imagine: the trees I supposed every one would take for granted were grown in the earth in the baskets, and only surrounded by moss on the tops as a mulch. Why a peach or plum tree can not be as well grown in a wire basket of suitable dimensions, with a certain quantity of earth, as in an eleven-inch pot, I can not un-

derstand. I have no interest in Mr. Lawrence or Mr. Lawrence's gardener, nor do I know that I shall ever meet again with either. The description was furnished for the purpose of showing how much can be done with pot trees, in which I am particularly interested. I did not examine Mr. Chamberlain's vine baskets closely, for I know that a pot vine can be as well fruited in a wire basket as in an eleven-inch pot, and why Mr. Chamberlain should find it necessary to tie on grapes to his baskets, (as your writer intimates and asserts he has done,) I do not know. That he may have done so I do not deny, but I do assert that it was not necessary for him to have resorted to any such means, as a strong pot vine can be successfully fruited in a basket. I have never been distinguished for going about the world half asleep, as your correspondent would have your readers believe, nor has my veracity ever been before questioned. Others, fortunately, saw the turtles and frogs, so that your correspondent's sneers in relation to them are unnoticed. Mr. Chamberlain's success as a gardener has made many jealous of him; it is possible that the originator of the "Second Bar+num" may belong to this group.

[We are glad to hear you speak again, Doctor. We do not understand "A Close Observer" as questioning your veracity; that we should not have permitted; but he does seem to think that your eyes were not wide open. The case, as we understand it, from "A Close Observer's" article, and the one copied into the *Cincinnatus*, stands thus: Mr. Chamberlain is said to be able to grow Grapes, Peaches, Plums, &c., in a *cup of charcoal* surrounded with moss, (not in a basket of *earth* surrounded with moss, as you put it,) better than they can be grown in the ordinary way. We know that plants will grow in pure charcoal, but that fine grapes, &c., can be matured in a *small cup*, filled with charcoal, sand, and water, is another thing. "A Close Observer" says it is not done. We hope Mr. Chamberlain will be able to show that he is not understood, and that no deception has been practiced: we can really perceive no motive for it.—ED.]

CRANBERRY CULTURE.

BY F. TROWBRIDGE, NEW HAVEN.

THE cultivation of the Cranberry is now engaging the attention of many horticulturists; and, considering the amount of labor required, and the sure and certain market for it, which can never be supplied, as it is almost the only article of fruit that can safely be exported or can be taken on long sea-voyages, it will always prove a profitable crop. The cultivation of the Cranberry possesses an advantage also in the fact that it can be raised on land that is of but little value. It is, however, necessary, in order to be perfectly successful, to have the ground well prepared before planting out. The best land for Cranberries is a moist, sandy loam, with a wet stratum twelve inches from the surface, or near some brook or stream. If quite wet, it should be drained, and the drain so made, if convenient, as to flood the ground when required, that the water can cover the plants in winter and until late enough in the spring to prevent the frost killing the blossoms. If very dry when the fruit is setting,

the water should be let on and off; and again, also in August or first of September, if necessary. The above are all the advantages of flooding them.

As the plant lives on air and water, it will do well under such treatment. If the land can not be drained, and has a peat, muck, or shaky bottom, it should, if possible, be covered with two to four inches of sand, (sea-side sand is best,) which, being open and porous, admits water freely, and helps retain it in the soil below. The plants, when set out, should always be below the sand four to five inches under ground. Shallow planting has been the cause of most of the failures which have occurred. The sand also tends to prevent the grass and weeds from growing rank, and the plants are easier kept clear, which is all the care needed in their cultivation.

The process of raising them from seed is very slow, and is not advisable. The vines are sometimes gathered, cut up into pieces, and sowed in rows as you would peas. Another plan is to take up sods and bunches of roots; but in this way foul weeds, grass, etc., are taken up with them. The best way is to plant single roots deep in the ground. The stem will also take root, and give a strong growth to the plant, and much larger fruit. For field-planting, the plants should be set about two feet apart in the rows, and two feet between the rows; it will then take about 10,000 plants to the acre. In gardens and small plots, they can be put out from one foot to eighteen inches apart, and the ground will be much sooner covered.

In putting them up, care is taken to select bearing plants, (the largest, rankest plants, with green leaves, are usually barren; the bearing plants are more slender, with the leaf somewhat brown;) these are tied in bunches of one hundred each, with moss, and packed in moss for transportation. They can be sent in this way to any part of the world. They can also be forwarded at any time of the year, as they are very tenacious of life. If in the winter, and they get frozen in the moss, cover the roots in soil until thawed. At the small price for which they are now sold, it is more desirable to purchase the plants than attempt to gather them. The best variety for all soils, except very wet ones, is the common Bell variety; they are earlier than any other kind, and will thrive in tolerably dry soil with care. They are sold by some dealers for upland. A strictly upland variety has not been found, unless it be the small Newfoundland variety, which at present can not be procured in quantity. The Cherry variety will only grow on very wet land; it is larger, but later, and not as good a bearer. From one hundred and fifty to two hundred bushels have usually been gathered from an acre. If the above is of any use to those who wish to grow the fruit, you may make such use of it as you please.

RURAL SOCIETIES—THEIR RISE, PROGRESS, AND FAILURE.

BY R. ROBINSON SCOTT, PHILADELPHIA.

YOUR long experience, friend editor, in the management and organization of Horticultural Societies, must have enabled you to judge of the utility of the same, as now generally conducted, and must have convinced you that in many instances they fail to meet the wants of the age, and are wholly inadequate to the purposes for which they were originally called into existence. I have noted during the past two exhibition seasons a growing conviction

that there are fundamental errors in their management, as well as in the means chosen to carry out their professed purpose. Let us canvass this matter fairly and quietly, and discover, if possible, the causes for the falling off in many once influential societies.

To do this judiciously, we must refer to the societies themselves, to their former flourishing condition and their present comparatively feeble state. We must trace the gradual development of dissatisfaction among the members, and discuss the acts of their officers; but you will demur to such a subject being introduced into the columns of the *courteous HORTICULTURIST*, and that, too, by one who is well known as ignoring courtesy when facts are wanted.

Well, we can not be permitted to impeach the respectable officers of these societies, nor, indeed, be allowed to speak the facts as to the position of the societies themselves, unless in so indirect a manner as not to be offensive. Let us try.

Society Number One. An agricultural club, seventy-five years established, incorporated by charter, meets in the second largest city of the Northern States, has a library and reading room, a president, two vice presidents, recording and corresponding secretaries, a treasurer, and librarian. Annual dues, \$3. Holds monthly stated meetings, and occasionally an annual exhibition. The treasury is now without funds, and the society involved in debt, growing out of its recent attempt to get up an exhibition. The deficit is being collected by voluntary contributions, and is almost made up. What has this old society done for the promotion of agriculture, practical and scientific? I shall leave this question to you or your correspondents.

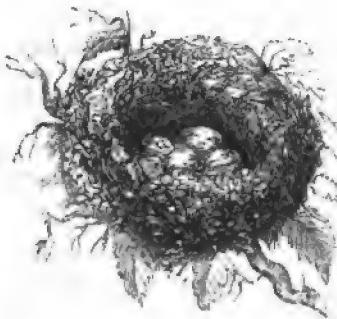
Society Number Two. A horticultural society, thirty-three years established, incorporated by charter. Has a valuable library, and had once a funded property of some twenty thousand dollars, latterly reduced to \$13,000, which is now, I believe, unavailable. Has a president, four vice presidents, two secretaries, a treasurer, three professors, and a long list of committees. Formerly held monthly stated meetings, and displays of plants, fruits, and escutcheons, as well as a grand annual exhibition lasting for three days. Now the number of displays is reduced to eight, and the annual one discontinued. Annual member's fee, \$3. Life membership, \$25. Located in the second largest city of the Northern States. Annually becoming less efficient and poorer.

Society Number Three. A horticultural society of the empire city, incorporated some thirty years ago by charter, *had* a library, holds monthly stated meetings and displays, as well as an annual exhibition. Annual fee, \$3. Of this society you know more than I do.

Society Number Four. An influential horticultural society, established in the capital of New England, has a valuable property, a hall, and other real estate; holds creditable monthly displays and a grand annual exhibition, awards valuable premiums, and is, in truth, an efficient society, notwithstanding the periodical bickerings and jealousies among its prominent members, generally resulting from disputes about premiums, or deceptions practiced upon the committees to obtain such. Now, Mr. Editor, you see the scope proposed in reference to our Rural Societies. When the positions of these organizations shall have been stated, we shall have something to say as to a remedy. Are you and your readers ready for the question?

[We think much good might be done by pointing out wherein these societies

have failed, and the *causes* of such failure, in order that these causes may be avoided for the future by them and others. This will naturally lead you to analyze the principles by which they have been governed, and afford you an opportunity of discussing their soundness. This will tax your acuteness and judgment to such a degree that you will have little desire to inquire into personal motives. Your position will be that of a judge rather than a lawyer, and you will therefore not be unmindful of the gravity pertaining to such a position. As we have had no inconsiderable experience in such matters, we will advise with you from time to time, if that should be necessary. Let us all be animated by a desire to do *good*; with such a spirit we can see no objection to treating this matter. In regard to No. 3, you should have finished, as you began, with the *past* tense; but we shall have something to say when No. 3 comes fairly up. You will probably have a No. 5 before you get through. It is a lamentable fact that Horticultural Societies, at least those in our large cities, have not accomplished satisfactorily the objects of their formation, and are far from occupying that high position which gives dignity and authority to their proceedings. We have often expressed the conviction, that a Horticultural Society which simply holds a couple of public exhibitions annually, has left undone the most important part of its duties. The subject, we know too well, is beset with difficulties, but we are far from regarding them as insurmountable. It remains to be seen whether our correspondent can suggest "a better way."—Ed.]



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OVERWORKED.—That word describes our feelings precisely. We are almost used up, but with an unabated desire to go ahead, and go ahead we shall as long as there is any thing left of us. Our present number may be a day or two late, in consequence of not being able to do any thing for it till the January number was out of the way; but we shall have soon recovered from the effects of the fire, and go on as usual. Some of our readers have, no doubt, had their patience tried a little, but the nature and extent of our misfortune will no doubt be an ample apology for our short and long coming. We have received many letters abounding in the warmest sympathy, for which we desire to return our hearty acknowledgments. Some of our correspondents whose letters were destroyed we have heard from; others not. One letter about *Peach glands*, another about *Lobelia*, (from a postmaster, we think,) another about a cheap *Grapery*, another about the change of color in plants, and others which we can not remember, we should like to have again. They were answered in the burned number, but we can not repeat the answers without the questions before us. Will you not oblige us by writing again?

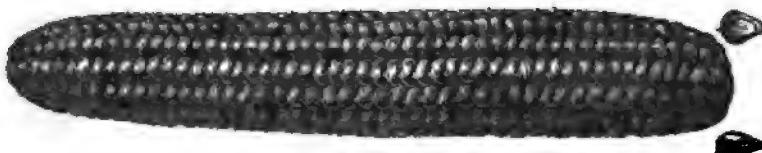
ERRATA.—We find there are some errors in our last number; the wonder is that there are not more. In Mr. Downing's article, p. 40, second line from bottom, "white" should be "while," to read thus: "The young wood of Carolina is reddish, while the New York Pippin is very dark," etc. On p. 41, in synonyms of Nickajack, "Chaltram" should be *Chatham*, and "Cheatan" should be *Cheataw*. In B.'s letter on boilers, p. 53, line 11th from top, for "I will prove," read "I could prove," etc. In line 12th from top, for "honest truth," read "known truth." In line 14th from top, we presume after the word "altogether," add, "and we burned nearly double that quantity." These words were not in the MS., but B. considers them necessary, and they would seem to be so.

YALE COLLEGE LECTURES.—These lectures, we regret to learn, have been postponed in consequence of the disturbed state of the country. The regular scientific course on Agriculture, however, will be continued as usual; the lectures are open to the public. They are designed to cover the whole ground of the relations of science and agriculture. The fee is \$10.

MOTTIER'S CATAWBA WINE.—We have received some samples of this wine. It is the pure, unadulterated juice of the grape, and comes up to our idea of what a first-class wine should be. It is nourishing and refreshing, without being intoxicating, and is superior, in our estimation, to the great mass of Rhine wines imported into this country. It has a fruity taste which is peculiarly palatable to persons accustomed to drinking dry wines. Continue to make such wine, Mr. Mottier.

OUR BINDER.—In noticing our "artists" last month, we meant to have alluded also to our binder, who deserves a good word at our hands. He helped us very materially last month. Besides being one of the best of binders, he is always prompt, quick, and willing. We should be sorry to part with Mr. Brockett.

BRAZILIAN POP CORN.—We have received from M. W. Philipe, Esq., of Edwards, Miss., an ear of corn with the above name, which is the prettiest thing in its way that we have ever seen. We give a drawing of it. The color is red. The form of the ear and grain can be seen by the en-



graving. Mr. Philips says that "twenty-nine stalks gave two hundred and fifty ears," in an excessively dry season. One stalk bore twenty-five ears, and another twenty. He thinks it was injured by "suckering," the tendency this way being excessive. Now, Mr. Philips, be good enough to let us know where it came from, and "all about it."

NEW CALADIUMS.—We have just received from B. C. Townsend, Esq., specimens of two new varieties of these interesting plants. One is named *Caladium Troubetzkii*. The leaf is long and narrow; color, dark, velvety green, with the midrib of a dark crimson, prettily feathered; there are also a few crimson spots. It is very pretty. The other is named *Caladium Belleynei*. The leaf is large, about the shape and size of *C. Chantinii*; the color is an exceedingly delicate silvery white, the midrib and veins being dark green; the veins becoming numerous on the margin, and very delicate and hair-like. The margin is green, with a vein running parallel with it all round the leaf. At the junction of the petiole and midrib there is a blotch of the most delicate pink. This is one of the most beautiful and striking Caladiums that we have yet seen. They were both originated by Chantin.

ROOM PLANTS.—One of our correspondents, we remember, asked us to furnish an extended list of plants suitable for growing in rooms. He can make up a list from the following: Azalea, Fuchsia, Primula Sinensis, Cuphea, Bouvardia, Chorozema, Geranium, Heliotropium, Roses, (China, Tea, and Bourbon,) Coronilla, Daphne, Cyclamen, Gardenia, Cypripedium, Hoya, Alonsoa, Begonia, Aloe, Ardesia, Calla, Viburnum, (*Laurustinus*,) Stevia, Fabiana, Lachenalia, Maurandya, Mahernia, Mimulus, Cacti, (the whole tribe,) Babiana, Sparaxis, Ixia, Myrtus, Ornithogalum, Olea fragrans, Myosotis, Pentas carnea, Pittosporum, Salvia, Euphorbia, Tremandra, Petunia, Verbena, Passiflora coerulea, Camellia, (when you become *au fait*,) Lemon and Orange, Deutzia, Lycopodium, Hyacinth, Crocus, Narcissus, Weigela; but we think we have gone far enough. From the species and varieties of the above you can select more than you will find room for. In this connection, read our article on *Room Plants* in last volume, p. 409; you will find it to the purpose. Read, also, our article on *Annuals in Pots*, p. 361, same volume. What is there said will apply to rooms. We advise you and all beginners to start with a small collection of plants.

WHALE OIL SOAP.—A subscriber requests to be informed where whale oil soap can be procured, and at what price. It is kept for sale by most seedsmen, and also by the principal druggists, and at some groceries. The price is eight cents per pound.

DOUBLE ZINNIAS.—We have to thank Mr. Bliss, of Springfield, Mass., for a paper of the new Double Zinnias, which we shall grow with great care. If half that is said of them be true, they

will become popular flowers, as the single ones already are. In the same parcel was a paper of "extra superb" Pansy seed, one of our favorites.

NEW TOMATO.—We are indebted to Mr. Bridgeman, New York, for a paper of tomato seed, labeled "Algiers Red Mammoth," which we hope will prove good.

THE PEACH CROP.—We already begin to hear of the destruction of the buds on peach trees about New York. On the 12th of January the thermometer in some places stood 20° below zero. Mr. Downing writes us that the buds are destroyed around Newburgh, and that will probably prove to be the case in many parts of New Jersey.

PROGRESSIVE GARDENERS' SOCIETY OF PHILADELPHIA.—The following officers have been elected for 1861: *President*, John Pollock. *Vice President*, James Eadie. *Treasurer*, H. A. Dreer. *Secretary*, (not yet elected.) The printed proceedings alluded to last month have been received. We are glad to see them in permanent form, for they are well worthy of being preserved, and will be read with interest by all engaged in horticultural pursuits. The price is 25 cents.

CATALOGUES OF MM. BLONDEAU-DEJUSSIEU AND MASSON.—In France, where the vineyard and its products have for many years been considered of primary importance, we would naturally expect to find not only the details of every branch of the business generally and thoroughly understood, but so systematized that new forms of the business would rarely be developed. In this, it would seem, we are mistaken; a class of dealers are there wanted now, which are undoubtedly called for in the early stages of any business, in regard to which full information for its entire management is not always possessed by those who wish to engage in it. We note the fact as one of the signs of the times; we are not unmindful, however, of the existence of such firms as Vilmorin and others. In France, the number of names of vines (local and general) is formidable, all of them having advocates of their merits, while, in reality, the number of the really valuable kinds is not large, and their characteristics are well understood by the intelligent, as well as their special adaptation to particular soils and localities. These facts are open to all who are disposed to investigate them; but there are many who will not take the trouble, choosing rather to be led (or rather misled) by the uninformed and untrustworthy.

For this state of things, Messrs. Blondeau-Dejussieu and Masson propose a remedy, a brief outline of which is all that we can give. They have published two catalogues, in which they estimate the value of the leading varieties, giving their synonyms, (which are very numerous,) with the climate and soil to which each is adapted, and all other information which the purchaser of plants for a vineyard is supposed to require. The information is precise, and valuable to the vineyardists (if we may coin a word) of France, and to all who wish to become so; and the facilities which they propose to afford appear to be worthy of consideration even in our own country. The persons whose names are here given are well known in France, and we presume are distinguished for their knowledge, integrity, and business capacity, all of which qualifications are requisite to fit them for their new occupation. Such a mission, well performed, would be a beneficent one for any country, even for ours at this moment; for the indications are unmistakable that ours is to be a great grape-growing country, and the work is already in progress on a scale by no means insignificant.

We understand that these gentlemen contemplate a similar mission for California. We think it remains to be proved that the foreign grape is the best adapted to that climate; and the experiment should be entered upon very cautiously by all concerned. In France they would have no such uncertainty to contend with, and it therefore behooves them to consider the matter seriously before they advance too far. Our California friends would also do well to give the subject a like serious consideration before embarking their capital too deeply. We need not say, however,

that we wish to all concerned the full measure of success which belongs to well-directed efforts. Experiment and investigate cautiously, and adopt only such facts as are well ascertained. One well-ascertained fact is worth many plausible inferences. In view of past experience with foreign vines, we drop a word of caution to our friends in all parts of the country; their success is not only more than doubtful, but at present they are unneeded: in a few years we shall have numbers of native grapes that will meet all our requirements.

A LIST OF FRUIT FOR NEW YORK.—A committee was recently appointed by the American Institute to prepare a list of fruit adapted to the vicinity of New York. They first decided to adopt only a limited number of each kind; next, to pass by any kind to which any member of the committee objected. Thus, when the Newton Pippin was proposed, three members objected to it, and no more was said about it. The objection was not to the quality; for the committee were probably all agreed that it is the best of all apples in this respect; but, that it did not "do well" with them, and, consequently, was not profitable to grow for market, this being the purpose for which the committee were preparing the list. The adoption of this rule will account for the omission of some fine fruits. Others, equally as good as those adopted, would have found a place in the list if it had been larger. The committee, however, seem to have been satisfied in making out a list of the limited number, embracing reliable varieties for the purpose in view. The report here follows:

"The committee appointed to make a selection of fruits from the catalogues of the nurserymen, to recommend as the most suitable for cultivation in the vicinity of New York, make the following report:

"That in preparing the lists here presented, the committee adopted the rule of rejecting all kinds in regard to which their experience was not uniform, both as to quality and productiveness.

"The chief object in making this selection has been to guard the inexperienced cultivator against the errors so often made when the lists of the nurserymen are the only guide. Many young orchardists buy every thing recommended in the fruit books and catalogues, and find, after years of careful cultivation, that a large portion of their trees are worthless, and the fruit of the remainder of but little value. Some fruits of the first consideration in one locality are worthless in another, and some trees are productive in one soil and barren in another.

"This frequently involves the necessity of grafting, causing years of delay and labor without reward, until in many cases patience becomes exhausted. As an instance, the Doyenné pear, in Western New York, and some of the western states, is probably without a superior, while here, and on the sea-coast generally, it is only an incumbrance to the ground. The same may be said of many other though less known varieties.

"In making this selection, we do not wish to be understood to discourage amateurs from planting any, or even all, the old varieties that the catalogues pronounce good, neither do we wish to discourage efforts to originate new kinds; but we do say from our own experience that, in this locality, we believe the list here recommended will prove satisfactory—that all these sorts, with proper cultivation, will be productive, and that none will require re-grafting.

"Many persons will probably think, on reading this report, that better sorts have been omitted, and some of the committee will concur in this opinion; but they beg leave to say that while they have left out such varieties of apples as the Northern Spy, the Swaar, Pennock's Red, Newtown Pippin, Vandevere, Pearmain, Smith's Beauty of Newark, Hubbardston's Nonsuch, &c., &c., all could not be included without making too long a list, and that some of them are only superior in their native localities. Some have been proved inferior here, and others have not yet been proved at all. The same may be said also of the lists of pears, plums, and other fruits.

"Summer Apples."—Early Bough, Early Harvest, American Summer Pearmain, Summer Rose.

- "Autumn.*—Autumn Bough, Gravenstein, Hawley, Fall Pippin, Porter, Jersey Sweeting.
- "Winter.*—Baldwin, Rhode Island Greening, Jonathan, Monmouth Pippin, Spitzemberg, (Esopus,) Tallman's Sweeting, King of Tompkins County, Boston Russet.
- "Summer Pears.*—Doyenné d'Eté, Dearborn's Seedling, Beurré Giffard, Rostiezer, Tyson.
- "Autumn.*—Bartlett, Seckel, Beurré d'Anjou, Beurré Superfin, Doyenné Boussock, Duchesse d'Angoulême, (on Quince,) Flemish Beauty, Fondante d'Automne, Sheldon, Urbaniste.
- "Winter.*—Beurré Gris d'Hiver Nouveau, Beurré Diel, Lawrence, Vicar of Winkfield.
- "Cherries.*—Belle de Choisy, Bigarreau, or Yellow Spanish, Black Eagle, Downer's Late Red, Early Purple Guigne, Elton, Black Tartarian, Governor Wood.
- "Plums.*—Green Gage, Coe's Golden Drop, Imperial Gage, Washington or Bolmar, Smith's Orleans, Jefferson.
- "Peaches.*—Crawford's Early, Crawford's Late, Early York, (Large,) Bergen's Yellow, George IV., Oldmixon Free, Morris White.
- "Clings.*—Heath, Large White, Oldmixon.
- "Nectarines.*—Downton, Stanwick, Early Newington.
- "Apricots.*—Dubois' Golden, (American variety,) Peach or Moorpark.
- "Grapes.*—Delaware, Diana, Concord, Union Village, Hartford Prolific.
- "Quinces.*—Orange, Rae's Seedling, Portugal.
- "Currants.*—Large Red Dutch, Versailles, Victoria, Large White Province, White Dutch, Black Naples.
- "Gooseberries.*—Downing's Seedling, Houghton's Seedling, (hardy American varieties, and free from mildew.)
- "Raspberries.*—Hornet, Franconia, Orange, Belle de Fontenay.
- "Strawberries.*—Triomphe de Gand, Bartlett, Wilson's Seedling, (acid,) Hooker's Seedling, (sweet,) Jenny Lind.
- "Blackberries.*—New Rochelle, (or Lawton,) Dorchester, Newman's Thornless."

BOOKS AND CATALOGUES RECEIVED.

Pomona Garden and Nursery Catalogue of Fruit and Ornamental Trees, Vines, and Plants, cultivated and for sale by William Parry, Cinnaminson, Burlington County, N. J. 1860 and 1861.

Catalogue of Fruit and Ornamental Trees, Shrubs, Plants, &c., cultivated at the Union Nurseries, Schenectady, N. Y., by C. Reagles & Son. 1861 and 1862.

Record of the Progressive Gardeners' Society of Philadelphia; being the first Annual Report, for 1860; embracing twelve Essays on important Horticultural Topics, with Discussions on the same. Also, the Record of the Organization of the Society, the Preliminary Meeting and Address, Rules and By-Laws, List of Officers, Members, &c. Philadelphia: Published by Authority of the Society, by R. Robinson Scott, Secretary, at 236 Chestnut Street. Price, 25 cents.

Spring Catalogue of Roses, Dahlias, and Bedding Out Plants, grown and for sale by Peter Henderson, Wayne Street, Jersey City. 1861. Agents, Mollvain & Young, Seedsmen, No. 9 John Street, New York.—We are surprised at the number of novelties in this catalogue, which the title gives no indication of.

J. M. Thorburn & Co.'s Descriptive Catalogue of Vegetables and Agricultural Seeds, &c. Garden, Field, Fruit, &c., Seeds. The largest collection to be found in the world, embracing every standard and improved variety. Also, tested novelties, both of domestic and some of foreign origin, that are suited to the climate of the United States. 1861.

Wholesale Catalogue or Trade List of Fruit and Ornamental Trees, Shrubs, Vines, Roses, &c., grown and for sale by Hatch & Co., at the Central Nurseries, Jackson, Miss. 1861.

Correspondence.

OCHRE POINT, Newport, January, 1861.

MR. EDITOR:—In answer to your article headed "A Second Barnum," I would wish to make a plain statement. Your "Close Observer," or Paul Pry, called late in the season, when we had disposed of all fruit, except a few withered pears, and a basket of grapes, which, once beautiful, had grown old, and was allowed gradually to go to decay. Finding, however, that it still preserved some remains of the beauty which had induced me to have it photographed, I had bound up a broken limb, and thought nothing more about it until I read the article, which I hope will, by attracting the notice of all lovers of progress, induce you and your friends to come and judge for yourselves. What has been done once can be done again. I have now a basket which has been two months in bloom, full of rich flowers. This coming season I shall send specimens of fruits and flowers produced in this way to the Horticultural Exhibition at New York. I have now new potatoes, tomatoes, radishes, and pineapples, all in perfect order, and I send you a sample. I am not a wit, like Mr. P., and can not answer him in his own coin. I have, however, read that the bodies found at Pompeii fell to pieces at the touch, and the fruit which had survived its time might well crumble into dust, if he handled it half as roughly as he has handled me.

I should not discuss this matter at all, but leave my vindication to the plants, which will give him his best answer next spring, were it not that his strictures are an insult to hundreds of people who have seen what he says can not be done. The *Journal of Commerce*, September 3, 1860, says: "Here one can easily fancy he is enjoying tropical life, for he has the heat of the tropics for the entire year, and their fruits, such as pineapples, apricots; figs, bananas, together with a great abundance of fruits of more northern climes, such as strawberries, pears, peaches, cherries, &c. All these fruits are *growing* in pots." And again he says: "Some of the trees grow hanging in baskets, which I believe was original with Mr. Alfred Chamberlain." I could cite hundreds of other witnesses, but, sir, in a few months I shall produce the fruit itself, and will agree to furnish you a basket of grapes in full bloom, in return for the responsible name of this horticultural St. Thomas.

SECOND BARNUM.

[We are very glad to have this response from Mr. Chamberlain. An explanation was due alike to himself and his friends. It will be seen elsewhere that "A Close Observer" has also brought out Dr. Norris, who insists upon his former statements. The explanation of Mr. Chamberlain sufficiently accounts for the falling of the grapes; it also leads us to the conclusion that the fruit was *natural*. "A Close Observer" says the berry that fell was "smashed to atoms;" from which the impression was produced that the fruit was *artificial*, since no natural fruit could be reduced to an *atomic* condition in any stage of maturity. If this was not intended, then the expression was an unfortunate one. Again, Dr. Norris says, the vines and trees are grown in pots and baskets filled with *earth*; "A Close Observer" says, in tin cups, filled with charcoal, sand, and water, surrounded with moss. We gather from Mr. Chamberlain's note that he grows them in the mode described by Dr. Norris. We should like to have these discrepancies reconciled, and trust that Mr. C. will undertake the task. He has shown a commendable degree of self-command under pretty sharp handling, and we hope he will take up the pen again. We hope, also, that "A Close Observer" will be willing to correct any errors into which he may have fallen. At the proper season we will accept Mr. Chamberlain's invitation, and see these things with our own eyes. He would not be likely to invite us to his place unless he felt sure of his position. The samples alluded to have not yet come to hand.—The last word had not been penned five minutes, when the box was placed on our table. We find it to contain *Strawberries*, (not large, but ripe, with a good flavor,) *Tomatoes*, (thoroughly ripe, and good,) *Radishes*, (nice and crisp.)

Mustard, (with a pungency just about right,) a *Cucumber*, (nearly a foot long, but will be less after we get home to-night,) *Potatoes*, (of good size and smooth skin; but we shall know more of them when we get them in *our* pot,) and a handsome *Pineapple*, all grown in pots; but grown in any way, they would do Mr. Chamberlain great credit as a skillful gardener. As we look at this fine lot of fruits and vegetables, so rare at this season of the year, and consider how they have been grown, we feel like posting off to Newport at once. We desire to return Mr. C. our best thanks.—ED.]

January 22, 1861.

MR. EDITOR:—Your suggestion about testing different boilers in last HORTICULTURIST, is just the thing. Let it be done, and we shall get at something like facts, and facts are wanted. I have a *tubular* boiler, which pleases me well; the size is small, but it has great power. My old gardener, an intelligent man, worked it in a very satisfactory manner, and thought it a capital thing, but considered the fire surface too large. He left me to go in business, and with my new gardener began my troubles. The second time he fired up he boiled nearly all the water out of the pipes; and this he repeated three times in the course of a week, excusing himself by saying that the boiler was a bad one, and urging me to replace it with another. I knew the boiler had been a good one, and supposed it might be still. Having made myself familiar with its operation, I passed several evenings with my new man, teaching him how to work it, and now he thinks he "never saw such a fine boiler." This confirms what you say, that a man don't always know when he has a good boiler, because he don't know how to work it. Boilers are often taken out to make room for others no better, and sometimes not so good. Boilers are often too large or have too much fire surface, and then they give a good deal of trouble by boiling over. If there is pipe enough in a house, there are few boilers that won't keep it warm; still, some boilers are much better than others. I am content with mine. But I should like to see your suggestion for a trial of boilers carried out.

Respectfully yours,

AN AMATEUR.

[We shall do our best to have this matter put in a practical form, and bring out the "facts." Your "new man" is not the only one who has condemned a good boiler, simply from not understanding its management. There is undoubtedly a choice in boilers, and if we all keep cool, we shall one of these days know which is best.—ED.]

"MORE ABOUT BOILERS."—PETER B. MEAD, Esq.—*Dear Sir*,—In my article last month read weighting the *valve* instead of valves. Now to your questions. Probability of blowing up? None. Amount of danger? None. How to avoid it? "First catch your hare." In regard to capacity? Can not say, the one I have in use being a small one for heating a forcing bed, and not a green-house; at a guess should say that, where a four-inch pipe is used, a one and a half or two inch would answer. In regard to detail, do not think there is any more to give; almost any machinist will get up one from the sketch.

A word of explanation of action may be necessary for those not familiar with such things. The apparatus being filled, (the regulating valve having been lifted to let out the air,) valve weighted at desired point, and fire started, the water expanding with the heat, the surplus amount is forced through the valve, and runs away, or into the feed tank, as shown, leaving the proper amount in to work at the pressure fixed upon. After this discharge, if more fire is made than is necessary to keep the water at that point, it runs over again, which must be stopped, either by increasing the pressure, or damping the fire, until you hold it at the desired temperature, just below the blowing-off—not "up"—point. It is least trouble, though, and saves water, to put on the full weight at once, and blaze away; damping the fire when your house gets too hot. Nervous individuals, however, who are frightened at the mention of a

hundred pounds' pressure, can regulate it to suit their pulse. When the fire is let down, or cleaned out, the pressure being taken off the check valve or feed pipe, the water in the feed tank runs in, and fills the machine up again. If the fire be kept up, so that the pressure on the check valve from the furnace is never less than that on it from the feed tank, (which, of course, depends upon the height at which it is placed, depth, etc.,) it is not necessary that a single drop of water go in or out after once fairly at work; but to insure a proper circulation at all temperatures, the cistern should be kept filled, so that the machine can fill itself when necessary.

In the event of steam being raised, which can only happen from the grossest negligence—firing up and not weighting the valve, and running the water out—no harm will arise; only the trouble of letting down the fire to get in the water. If *all* the water were out, and the thing red hot, it might not be pleasant for "my man" if he poured any in; though I am not certain that, even in this case he would get his desert. Where water-works exist, all trouble of tending the cistern is removed, by attaching the feed pipe to them; the regulating valve must be kept weighted at a greater pressure than the head of water, or, in the event of the fire being let down, it will keep running through.

If any thing more is written on this subject, it had certainly better be, as you say, "divested of all personal considerations whatever." When I penned my last article, I had no idea that B. was writing up, or P. down, a particular make of furnace; I do not think I noticed whose Mr. Park's was. To suppose that *any* apparatus of the proper size will not warm a house is simply ridiculous; of course there is a choice of furnaces, or boilers; the most important point being, I should think, to have it large enough to hold fire for ten hours. Whether this or that one will evolve more heat with the same fuel can only be determined as you suggest, by working first one and then the other, in the same house, and making accurate thermometrical observations, out and inside; the variations of the force, and the direction of the wind, will prevent even such experiments from showing exactly correct results.

Mr. Chorlton no doubt hits the nail on the head, when he says Mr. Park's apparatus is too small, as by data given he evidently knows what he is talking about; this is re—"confirming the opinion I formed," (jumped at, having no experience in the matter,) which is all I meant to convey; that is, it is too small *sometimes*—in zero weather like last Sunday—and here lies the advantage I claim for the wrought-iron, high-pressure apparatus: that it can, when necessary, be forced to do double or treble the ordinary required duty.

The error at Mr. Park's probably arose through miscalculations on the part of the makers, or mistaken economy on the part of the purchaser. I would remark, *en passant*, that he loses considerable heat by carrying his smoke pipe directly away outside.

I think Mr. Chorlton and others are behind the age in the affection they exhibit for cast iron—it is becoming considered a very mean material, only fit to be used where ballast is required.

Jan. 21, 1861.

BROOKLYN.

[We concede "the hare" to you, but can not consent to let you reduce the bore of your four-inch pipe to any other whatever; that would be a great mistake. Our object was to give you a chance to say something bearing on the prevalent prejudice against high-pressure "machines" of all kinds. Though you do not think there are any more details to give, you have notwithstanding furnished just the details our readers want, and for which we thank you. It would certainly be difficult to "blow up" your boiler, except, as you say, through gross carelessness. We shall take an early opportunity to see it in operation.—ED.]

BROOKLYN, Jan. 21, 1861.

Mr. Editor.—Dear Sir,—When a man is set upon by a crowd, it's but "a small request" that the on-lookers allow him room to defend himself, and as you and your readers have stood by and

seen me considerably cuffed, in fair return just give me room to swing my arms a bit, without any sly poking, till the odds are nearer even. First, let me deny having written formerly only to injure Wethered & Cherevoy, as your correspondents wish to aver. I might claim to be "a friend of truth and fair play," as well as some of them; and the article of B. of Brooklyn was a sufficient incentive to call out such, without any spiteful feelings in the matter. In that answer you will find nothing but the most simple and direct reply, and I leave it to you and your readers, if in that they can find any sufficient provocation for such a general assault. Had I wished to injure the "well-earned reputation" of W. & C., a very different view of the case might have been presented.

Now to Mr. Chorlton, my first assailant in your last number. At the earnest request of Mr. Wethered, in the summer of 1859, I consented to have two of my houses heated by his new boiler. He took the dimensions, calculated the requirements, and put up the apparatus accordingly. Not professing to be "*au fait*" on boilers, this being my first, I was not so foolish as to desire W. to put in less pipe than he thought necessary. The job was to be thoroughly done, and a written agreement was made "to heat the houses satisfactorily," which I think was not done. Now, Mr. Editor, you and your readers can judge whether I or Mr. Chorlton (who tries to prove that the amount of pipe was entirely inadequate to the buildings) most effectually injures W. & C. It is necessary now for a fair hearing that your readers get the facts of the case further. First, W. & C. put in a No. 4 boiler for me, which, after testing, they had taken out and replaced by a No. 5. This, when the pipes got hot, threw the water from the tank in such a sudden, heavy, and unbroken flood, as I never heard of any other boiler doing; and one night, after an absence of two hours, (having left the water above the flow pipe in the tank,) I looked in the tank and saw only, before the match went out, that the water was too low; and not suspecting that the boiler could be empty in so short a time, turned cold water in the tank; and soon after, going out to the boiler, found the water extinguishing the fire. W. & C. next day put a No. 4 boiler in place of that destroyed, (not having a No. 5 ready.) This was not expected to heat sufficiently, but it did so well that, rather than risk another tearing down in winter, I kept it till the next summer, and I have not been slow to say that it did much better than ever was expected of it in keeping the frost out. As to its boiling the water, it once caused the same alarming overflow at the tank, as the No. 5 had done, which I supposed was boiling; but on talking with a well-versed mechanic, he was of opinion that the water never had boiled throughout, that steam was generated in the boiler, which drove the water out of the pipes, *in consequence of the too great distance of the expansion tank from the boiler.*

My second assailant, Mr. Wightman, under the guise of friendship accuses me of writing for "the purpose of injuring" W. & C.; not a very friendly accusation, entirely uncalled for, and which I deny. He says I told him that W. & C.'s apparatus had given me "perfect satisfaction." Let me ask Mr. Wightman if I didn't tell him the history of my boilers, destruction, etc.; and how is it possible I could tell this with "perfect satisfaction" appended, to a friend, three weeks after the notorious destruction of my boiler? Wightman tells of ten boilers of W. & C.'s which give the greatest satisfaction. I only spoke of my own, which I am thankful for having had replaced by one of Hitching & Co.'s; and I believe I am not alone in this; and that, too, in more experienced hands, and where the boilers had competed on the same grounds.

B. of Brooklyn, instead of answering my charges in a manly way, and signing his name, as called on to do, neither admits nor denies that his former letter referred to my place; but seemingly wants to bemuddle the matter by proving both. Like some pettifogging lawyer, he dodges around to escape a straight shot, and with his own crooked gun (in true Irish fashion) tries to shoot me around the corners. I stand by my former letter, and deny that I found the pipes cold and the boiler red hot before turning cold water in the pipes. I never saw the boiler red hot, though B., with his far-reaching eyes and elongated ears, might; and though B. professes more knowledge than mine on boilers, I am of opinion that, with cold pipes and the boiler red hot, the pouring in

of cold water would at once have exploded the boiler, (which was not done,) and the last of B.'s gratuitous assertions. I have not argued against W. & C.'s boiler particularly; in my case it was probably the arrangement of the apparatus that was wrong more than the boiler itself; an important item not to be lightly overlooked in such matters. As your correspondents have praised W. & C.'s apparatus so highly, in justice to others let me state that, with a house and a half more, and three hundred feet additional pipe, my heating is now done *most satisfactorily* by one of Hitching & Co.'s new boilers, without half the trouble that W. & C.'s gave, and (at the risk of being called "close") with very little more coal than their No. 4 took to heat, very indifferently, three hundred feet less pipe.

I have no desire to trespass on your space further, Mr. Editor, and shall not return again to this subject.

Yours respectfully,

JAMES H. PARK.

[The explanations in Mr. Park's letter make this boiler matter quite clear to our apprehension, and we think no more is necessary to be said on the subject, so far as those interested in the use of boilers are concerned. It is manifest to us, that in this particular case the boiler itself is neither to be blamed nor praised. Mr. Park very candidly admits his want of experience in the use of boilers at the time; and though he undoubtedly committed an error of management, it ought not, while there was any water in his *return* pipe, to have been productive of any result more disagreeable than filling his house with steam; provided every thing else was right, which clearly was not the case. We can readily perceive wherein this heating apparatus failed to give satisfaction, and could demonstrate it to the satisfaction of both parties. The whole subject may be summed up and dismissed, so far as our readers are concerned, as follows: Mr. Park erred in management, but still had just cause of complaint, not against the boiler, but against the arrangement of the apparatus, if the parties were not restricted as to the size of boiler or length of pipe. One erred in management and the other in judgment. It is one of those cases in which there is a little error on both sides: a little concession, a little explanation calmly made, would settle this matter on a just basis, and preserve the "union" in our parish: we mean such concessions as are consistent with the obligations of right and truth.—ED.]

FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.—This Society held its annual meeting in Rochester on the 9th and 10th of January. The attendance was large, and the proceedings of much interest. The display of winter fruit is said to have been very fine. The president, Col. Hodge, not being able to be present on account of illness, his address was read by Secretary Bissell. For the proceedings which follow we are indebted to the kindness of a friend, to whom we return our cordial thanks.

After reading the President's Address, the following officers were elected for the ensuing year:

President—E. Moody, of Lockport. **Vice Presidents**—J. J. Thomas, Union Springs; W. Brown Smith, Syracuse; Prof. W. R. Coppock, Buffalo. **Secretary**—C. P. Bissell, Rochester. **Treasurer**—W. P. Townsend, Lockport. **Executive Committee**—P. Barry, Rochester; J. J. Thomas, Union Springs; C. L. Hoag, Lockport; W. B. Smith, Syracuse; Joseph Frost, Rochester.

The report of the Committee on Fruit will be found elsewhere.

The Committee on Subjects for Discussion reported the following:

1. The best method of gathering, packing, and transporting pears to market.
2. The best method of preserving fruits, so as in every way to prolong the period of consumption.
3. Can the yellows in the peach be introduced by the importation of trees from infected districts?
4. Which is the best stock for the cherry, for general purposes, the Mazzard or the Mahaleb?
5. The Northern Spy apple; what is the value of it as an orchard fruit?

6. Is it advisable to plant, in Western New York, the White Doyenné pear for orchard purposes, in view of its present liability to crack and spot in certain localities?

7. What is to be understood by the term "a standard," and what by the term "a dwarf tree?"

8. What influence has the stock upon the graft in modifying or changing the quality of the fruit?

9. In transplanting trees, is pruning the tops and roots of importance, and if so, under what circumstances?

These subjects were taken up and discussed in the order named.

Subject 1. The best method of gathering, packing, and transporting pears to market.

Dr. SPEAR, of Yates County, thought the best way was simply to barrel them; when pretty full, shake the barrel gently, and frequently shake gently as you fill, so that the pears match one with another, and the whole get pretty well consolidated; and when full, use pressure in forcing down the head. It is necessary to use care in gathering, so as not to bruise in picking; the barrels should be packed in the orchard, near the trees. In transporting to the railway, or to the market, all jarring should be avoided. There is no secret as to keeping pears, other than the keeping them in a cool room. Pears, and grapes, too, would perhaps keep better by drying them a while in a well-ventilated room before putting into a tight vessel; but there is no difficulty in keeping even our Bartlett pears.

Dr. SYLVESTER, of Wayne County, said—Have them fully matured, and gather before severe frost. Handle carefully, and place in a dry room. They are allowed to sweat for a week or more, and then should again be carefully selected over, assorted, and packed in half barrels made for the purpose. It is better to arrange them carefully in packing, and to shake down often; put a few at a time into the half barrel, and then jar gently, and then add. Pack your half barrels full, and keep until very near the point of ripeness before sending to market. They should be in such a condition that by a week's ripening in the city they are ready for market. In assorting pears, it is best to make about three classes of the fruit—best, medium, and poorer. By this method the first and second classes will bring as much or more than the whole of the fruit would have done if packed promiscuously.

L. B. LANGWORTHY, of Monroe County, thought that Osband's Summer pear needed picking as soon as the seeds colored, and that this was a test of the fitness of most for gathering. Some members coincided, while W. B. Smith, and Charles Downing, of Newburgh, differed. Mr. Downing mentioned varieties which did not blacken their seeds.

P. BARRY, of Monroe County, said—Summer pears are generally gathered while the seeds are quite soft and green; and that, in a great many pears which are well ripened in the house, the seeds were found not colored at all when the fruit was eaten. In summer pears the seeds are no criterion by which to judge. Winter pears should be left upon the tree as long as it retains its foliage; but after the leaves fall the fruit deteriorates in quality. The time for gathering winter pears is, in Rochester, about the middle of October of each year; say from 15th to 20th of October. Pears should always be gathered very carefully by hand, and it is often not best to pick all the fruit from the same tree at the same time. They should be immediately assorted, and the poorer qualities separated from the best; then put carefully into boxes, which should stand in a cool, airy place in the north part of the building, and be kept as cold as they can be at that season of the year. When frost comes, put them into some place like a barn floor, where you can cover them with leaves until the more severe weather comes; at which time they should be put into the cellar of some building in which there is no fire. The great point or object is to keep them as cool and dry as possible, and yet not let them freeze. Care in assorting is of great consequence; as in the market value, as well as in the keeping, a great deal depends upon the manner of assorting the fruit. As to the time of sending to market, opinions differ. For the present, pears must be marketed in the fall, and as soon as plenty of good pears are raised, there will be plenty of fruiterers to buy them; fruiterers who will know how to keep

them into winter, and how to ripen up and mature them as the market needs the supply. As to the need of a warm room to ripen them up, if good specimens are well matured upon the tree they will ripen up perfectly well in a cool cellar, and can be brought from the cellar in a splendid condition for the table. The gathering and packing of autumn pears is a very important matter; for, from some cause, many perish on the way to market. Gather early and assort carefully, because none but good, hard, clean-skinned pears ought to be boxed; poor pears infect the others. When packed, send to market by the quickest conveyance. Either peach baskets or small boxes are better than barrels, because in barrels they are very apt to heat, sweat, ferment, and decay. The smaller the quantity the less the tendency to sweat and decay. There is also a kind of fungus or black spot upon some fruit, which should especially be thrown out, for it is contagious. It spreads more rapidly when the barrel is warm, and communicates a bitter taste all over the fruits in the same package.

H. E. HOOKER, of Monroe County, thought good sound half barrels, with holes bored at the ends, none too large to ship pears in. Agreed with Mr. Barry as to the picking and keeping cool, but did not cover with leaves on the barn floor; it was for too short a time. Last fall he put the Glout Mourceau into barrels, and after sweating for a week, put them at once into a cool cellar, and is using them now in fine order. Don't think there is any more trouble in ripening winter pears than winter apples. Pears should be sent to New York in the fall, while they are hard, and in the very same manner as winter apples. It is important that they should not be heated, nor the sun shine upon them when first gathered. Great care should be taken, when first picked, to keep them just as cool as you can. As to putting at once into the cellar, would not put the pears into any cellar when first picked. Every apple and pear should be kept in a cool, dry, airy place above ground until quite cold weather. It is a capital plan to place in heaps, if it can be done without injury to the fruit; for it is a great object to have a good deal of fruit together. The pears thus retain the fine aroma and the real excellence of the fruit.

L. BARBER, of Ontario County—Pears should be gathered upon a cool, cloudy day, or if upon a sunny day, should be picked in the morning or evening. Pears picked in the heat of the day, and at once barreled up, ripen the sooner for it. Pears sweat more than apples, and the packages in which they are kept should always be ventilated. Prefers barrels to boxes, and if possible, wraps each pear separately in paper. Barrels are not jammed as much in moving; they are rolled.

Mr. JACOBS is a dealer in fruit. Producers make quite an error in shipping their fruit in too large packages; and another error in not having fruit properly assorted. A few poor specimens give a bad impression, even if every other pear or apple be of the highest perfection. The best things to pack fruit in are barrels or half barrels, and crates are the worst things to pack and ship fruit in.

P. BARRY could not agree with the gentlemen who recommended barrels. In Europe they always pack their pears in small boxes for market, holding from half a peck to a peck, between layers of dry moss or leaves. In England or Paris you see no such thing as barrels for the transportation of fruits; they use parcels which can easily be lifted and properly laid down by the person transferring them from vehicle to vehicle.

Mr. MOODY differed from Mr. Hooker as to the putting into a cellar; thought that when first taken from the tree pears should be put into a cool, dry cellar, to avoid out of door changes of temperature.

Dr. SYLVESTER suggested that where possible the fruit packers have a room in a side hill, which preserves an equable temperature, and yet is dry and well ventilated.

Subject 2. The best method of preserving fruits, so as in every way to prolong the period of consumption.

Mr. SHARPE, of Niagara County, preserves fruit by canning. Some fruit now on exhibition by

him was kept in his cellar. As soon as he had perfected the method, would give it to the public. Here were Bartlett and other fall pears in good order to-day.

HUGH T. BROOKS, of Wyoming, thought this subject a very important one. People have got into the habit of thinking that they can not help losing a part of their fruit by decay. At least one third of all the apples put into our cellars become decayed and worthless, and this loss is a serious one. Now some cellars keep fruit very much better than others. It is important to know what constitutes a good fruit cellar. Is it dryness? or is it lowness of temperature? or is it evenness of temperature? or what are the controlling causes as to preserving fruit? There have been some who thought their garrets better than even a dry cellar for keeping fruit.

Mr. BISSELL, of Monroe County, agreed in thinking this subject a very important one, because of the advantages possessed by winter maturing fruits, and by fruits which can easily be kept into and during winter, and then eaten fresh, over preserved fruits, over sweetmeats, and over dried fruits. These well-kept fruits possess decided advantages: 1st. As regards the health of families. 2d. As respects the trouble of preserving or keeping. 3d. As regards the expense of the preserving. And last, not least, the pleasure of partaking of fresh fruits, when we can thus "prolong the period of consumption," is far greater than in consuming the cloying and indigestible sweetmeats. The season when sweetmeats and preserves begin to be relied upon by housekeepers commences about (or soon after) New Year's, and is prolonged until the strawberry season in June, and, at the very least, is over four months in extent. Now, first, as regards the health of families, this latter part of winter and the spring is the period, the very time, when the physical strength is taxed to the utmost, and when the digestive organs need assistance instead of additional burdens. Let persons, at this period, give tone to their stomachs by the judicious use of nutritious apples, beautiful pears, and luscious grapes, and the difference in doctors' bills will speedily become apparent. As to the trouble in preserving, the difference is quite apparent between the days and almost the weeks when the females of the family are paring, or stoning, or peeling the fruits, and are stewing and steaming, not only the sweetmeats, but themselves, over the kitchen stoves and furnaces; the difference, I say, is quite apparent between these and the comparatively slight trouble required for the quiet boxing or barreling of the grapes, and apples, and pears in the cool, dry cellars. The expense of the stewing, and the cooking, and the preserving, and the enormous consumption of sugar, is another item; but, as that is a matter of dollars merely, we will not complain too much of that; still, it is no inconsiderable item in the family expenses of many a townsman of ours. And now, when it comes to the pleasure of partaking, that question is settled incontrovertibly, and without debate, by the fact that we never see these cloying sweetmeats presented upon the table while fresh fruits are in season. When guests are offered strawberries and cream, they never express a preference for preserved quinces. This pleasure of partaking of fruits as nearly fresh as possible was more than proved by the burst of applause which hailed our esteemed fellow-member, Yeomans, when he introduced his method of bottling and keeping fruits in a comparatively fresh state, and without totally destroying their native flavor by sickening additions and cloying combinations. Next March or April any member would speedily decide as to this pleasure of partaking, if offered a couple of Easter Beurré pears, or a saucerful of stewed plums; if shown a fine King apple, or a dish of ever so nice Yankee "apple sass;" a bunch of luscious Diana grapes, such as I see upon the tables before us, or a plate of jelly of the choicest sort. As to this "prolonging the period of the consumption" of apples, pears, &c., their keeping qualities have been and are fully discussed and proclaimed; but, as to grapes, we have hardly yet begun to test this delightful fruit in this respect. In recommending a grape, we speak of its hardness, of its productiveness, of its early ripening qualities, flavor, &c., but, as yet, very little of its keeping qualities. In my own case, the effort to keep varieties has thus far been rendered futile by constant requests to see our assortment, and to taste a few berries of each variety, and by the desire of each agent and salesman to carry with him the finest of the bunches remaining at the time of the gentleman's visit to our vineeries. But, in the midst of all these disadvantages, the Diana has surpassed our most

sanguine expectations; and the specimens shown upon your tables by me to-day prove what this splendid fruit would do when kept in a suitable manner, and not in a dry, stove-heated room; not every day opened, exposed, and handled by visitors; because, even now, not a berry drops from the bunch, but all are fine, plump, and fresh as can be expected. It is a very great desideratum to have a grape that ripens early and ripens surely, and yet keeps, and keeps well. I hope that we shall hear the experience of members as to other sorts as well as Diana; as to Concord, for instance, in respect to its keeping and its carrying qualities; for at whatever dinner party or evening entertainment during February or March, there should be presented finely kept, fresh Concords, Dianas, Cuyahogas, or Delawares, we apprehend that not a single partaker of the luscious fruit but would express his decided preference for such dainty entertainment over either the domestic or foreign sweetmeats as commonly set forth at our parties—would express his preference, I say, by the enthusiastic use of General Taylor's oft-quoted words, "A little more grape, Captain Bragg."

Mr. SHARPE agreed with the gentleman in considering this subject an important one, and hoped that fall and winter fruits could in some way be kept until the season for fresh ripening again.

H. N. LANGWORTHY, of Monroe County, had in the fall taken Bartlett pears, and after soldering tight into tin canisters, had placed them in the ice-house, deep in the ice. At the time when all other pears were coloring and maturing to perfection, mine were in the same condition as when put in. They ripened up well afterward, coloring finely, and acquired the true Bartlett flavor.

W. P. TOWNSEND had tried wrapping up pears in paper and in woolen cloths, and putting in baskets under ice; but, upon exposure to the air, the fruit kept that way became discolored, and proved to have lost its flavor.

P. BARRY—Pears after maturity continue to improve steadily toward perfection; this ripening process may be checked, but not suspended; and if it remain suspended for any length of time, it can not be awakened. Hence the danger of placing long on ice. Fruit-rooms should always be above ground, and should (like houses) be built with double walls to preserve an even temperature. In fruit-rooms the great objects are coolness and dryness; the heat never above 40°, and the air dry. You can then allow the ripening process to go on very slowly, only just enough to preserve its vitality, and can considerably prolong the period of its consumption. In England they never keep their fruits in cellars.

Mr. TOWNSEND had upon three occasions tried the use of Schooley's preservatory upon Bartlett pears, and kept them some time beyond the usual period for ripening, but always destroyed the flavor of the fruit.

W. B. SMITH had kept early fruits in this way in an ice-house, and they looked well for a month or six weeks; but the taste was destroyed.

Dr. SPENCE differed from Mr. Barry as to the ripening being a vital process. Thinks it only a chemical process, and one which can be suspended for some time by a low temperature, and yet renewed and perfected.

L. B. LANGWORTHY—Cold is a preservative principle, antagonistic to decay. Witness the frozen animals in Siberia. Fish, in the winter, become dormant in ice, and when put into water will again live. Agreed with Dr. Spence that the changes in the apple (and other fruit) are chemical, and that no principle except cold will preserve them without change. Apples will bear several degrees below freezing point without freezing the juices, and when brought out and exposed to the proper influences will ripen up well. Mr. L. referred to Mr. Bissell's suggestions as to the keeping qualities of grapes, and the best method of keeping. Prefers something like the peach basket, in which he packs them in layers, with paper between each layer, using great care that no broken or imperfect grapes are left upon any branches. Keeps grapes easily until May by keeping the baskets in a cool room as long as they can be without freezing, and then transferring to a dry cellar.

Dr. P. G. TOBEY, of Monroe County, exhibited some very fine grapes. Was accustomed to pick his Diana grapes about the first of November, and upon a warm, dry day if possible; puts into paper boxes about eight inches wide, twelve inches long, and three or four high, holding about five pounds to the box. Carried these boxes same day into a dry cellar with windows open. Had kept grapes for three years past with complete success until April. Grapes need an even temperature, and as low as possible, without danger of freezing.

Dr. SYLVESTER—Grapes should be fully ripe when picked, and all bruised or imperfect berries be removed from every bunch. If packed immediately and carefully, they will remain plump, and not shrivel at all. Best to pick on a dry day, and after removing all imperfect or bruised berries, pack in shallow boxes of wood or paper—not more than two layers in each box. Keep in a dry room, with as little variation in temperature as possible, until there is danger of freezing, and then put in cellar. Some of my neighbors keep their grapes very finely in stone jars, and preserve successfully as to plumpness and flavor of berry. If two layers of bunches are ever put into the same receptacle, we must put white paper between them—soft, unsized is best.

H. N. LANGWORTHY—Grapes should be picked as soon as ripe in order to keep well. The greener the stem of the bunch, the longer that bunch can be kept. A bunch with an unshriveled green stem never rots. Packs in peach baskets in turner's chips, in layers, with sugar maple chips between, and last year kept grapes with stems green until April. For sending to the New York market, should be put in single layers into paper boxes, and these boxes into cases. Has sent tons of them, and they all came out very fine. After picking, carry the grapes into a cool place at once, and keep the temperature as uniform as possible.

Mr. HOAG, of Niagara County, spoke of the importance of the uniform temperature, and of packing, so as not to bruise the grapes.

Mr. BARBER—We raise for market in our town more than thirty tons of grapes every year. Differed from Mr. Langworthy as to the green stems, because, unless dried, they are apt to mould. We always dry the stems, and pack in boxes of from six to twelve pounds, with two or three layers of grapes in the box, and fill the boxes full, so they won't shuffle about and "mash." If the fruit-grower uses light, well-ventilated rooms, it requires about two weeks to cure grapes for shipment to market. The fruit which is least thoroughly ripened when picked, shrivels the most. In boxes exposed to the air, grapes shrivel more than after being packed for market. Grapes are not injured while hanging on the vines by apparently severe frosts. Would pick as soon as the stems are ripe, pack in paper boxes, and put into larger wooden boxes, and they will be and remain plump when sent to market.

Mr. LA ROWE, of Steuben County, spoke of Mr. McKay, of Bloomfield, packing his grapes in barrels cut in two. Keeps them in these tubs until the stems shrivel; then assorts, and watches that there is no mildew. Keeps them thus about four weeks; then puts into paper boxes, and sends to market. It is important never to allow vines to overbear, and thus you have compact bunches of large and showy berries. To put up in paper boxes of about five pounds each, is the best way to keep grapes after the sweating process is through with. As to this process, *grapes always sweat*, and therefore the surer way is to cure well before putting into the paper boxes, or any other boxes for keeping.

To be continued.

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THE BERGEN PEAR
for THE HORTICULTURIST
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3. The Cyclic Subgroups



Hints on Grape Culture.—I.

 HERE can be little doubt, we think, that the grape is destined to play an important part in fruit culture. The grape will be very extensively cultivated, not only for the table, but for the manufacture of wine; and there is nothing chimerical in the idea, that at no very distant day American wine will be imported hence to Europe. The first decade in this revolution has already been reached, and we are now furnishing vines for planting in Madeira and the old Douro districts of Portugal, where the vineyards have been nearly destroyed by the Oidium. Already upwards of forty thousand Isabella and Catawba vines have been planted at Oporto. We do not think the kinds have been wisely selected, since the old Isabella and Catawba, of all our native varieties, are most susceptible to the influence which has proved so destructive to the vineyards of Portugal. Better kinds, in our estimation, for wine, would have been the Diana, Delaware, Lincoln, and Lenoir. But we only allude to this as one of the signs of the times.

We propose, in a series of articles, to throw out some practical "Hints" on the cultivation of the vine, giving prominence to our own experience on the subject. We purpose hereafter to elaborate these "Hints," and use them in another form. We may not be able to say any thing new on such an old subject, but among our readers there are many beginners, (in fact, it is at the request of a number of such that we write,) to whom we may be able to give a right direction at the start.

The first thing to be thought of is a proper *exposure* or aspect. For a vineyard, the best exposure is one looking south, or a little east of south. Where this is not to be had, we should choose an exposure in the following order: southeast, east, southwest, west, the last, however, being a bad one under most circumstances. A northern exposure should not be thought of, for it is only under very peculiar circumstances that such a one can be made available for the production of good grapes. Whatever the exposure of a vineyard may happen to be, protection of some kind is a very important matter. The prevalent winds injurious to vegetation come from the north, northeast, and northwest, and from the sweep of these the vineyard should be protected. We have found, in our experience, that shelter at these points exercises a marked influence upon the health of vegetation, no matter whether a vineyard, an orchard, or a garden. It equalizes, to a certain degree, the surrounding atmosphere, prevents sudden and violent evaporation from the soil and from the leaves of plants, and acts in other beneficial ways which we shall explain hereafter.

The material to be used for protection is of some importance. In some locations a natural shelter will be found in belts of wood; in others it will be necessary to supply it. A variety of trees may be used for this purpose, but we prefer some evergreen, and among evergreens the best are the Hemlock and Norway Spruce. Both of them will bear clipping almost as well as an Arbor Vitæ, though much clipping is not needed, the object being to get a hedge some twenty or thirty feet high. Whatever tree be used, whether evergreen or deciduous, let it not be one with wide ranging roots; for this reason, the yellow Locust is not a good one; it may be remarked, in passing, however, that roots do not ramble as much in a good soil as they do in a poor one; this is not, it is true, in accordance with the general belief, but it is in precise accordance with both our philosophy and experience. In some localities, a simple fence made of hemlock boards will afford a

good shelter; but the reader must exercise his judgment as to the kind and degree of shelter required for his particular case, our object at present being to impress his mind with the fact that something of the kind is necessary.

As pertaining to this part of the subject, we may remark, that a hill-side with a gentle southeasterly slope is to be preferred to a flat surface; we speak now of exposure, without reference to soil, drainage, or culture. It is better, because, other things being equal, it affords in the greatest perfection the conditions of warmth, shelter, and *aération*, the importance of which will hereafter be seen. Generally speaking, there is also a choice between the upper and lower portions of a hill-side, and in most cases it is well not to carry the vineyard too far down, since the temperature there is lower, the drainage less perfect, and cold strata of air accumulate which are injurious to the grape. The conditions of a long, warm, uniform season should be obtained as far as possible. These conditions we can never obtain in valleys, or on exposed hill-tops; hence the importance of shelter, and the necessity for avoiding low, wet land, or wet land wherever located. The fact that wild grapes often grow along brooks has sometimes been adduced as an argument against the necessity of selecting a dry, warm soil; but when a grape that a decent man ought to eat has been produced under such conditions, it will be time enough to answer the argument.

Before we leave the subject of shelter, it may be necessary to add a few words of caution. The object of shelter is to protect from winds injurious to vegetation, and to preserve, as far as possible, an equilibrium in the electrical conditions of the earth and atmosphere. We need shelter, but we must have, at the same time, a circulation of air. These injurious winds, experience teaches us, come from northerly points of the compass; hence we must place our shelter at the north, and extend it a little on the east and west; the rest of the vineyard may be left open. We must avoid hedging the vineyard in. The shelter should be sufficient to break heavy winds; in some cases a single row of Norway Spruce will accomplish the object fully, while in others more will be needed. It is not necessary that this shelter should be in immediate contact with the vineyard; it should in no case be so close that the roots of the trees will encroach on the vines. If this should happen, a narrow trench parallel with the trees should be made, and kept open. As the conditions under which shelter is to be afforded will vary somewhat in different localities, a good judgment must be brought to bear on the subject in all cases.

A few words may be added in reference to cities and their suburbs. The buildings and fences in these places usually afford all the shelter that is needed; in cities, indeed, it is sometimes present to a degree that is injurious, the circulation of the air being almost entirely prevented. As a general thing, however, our suburbs and villages present, in the way of shelter, just the condition for growing grapes in the highest state of perfection. That this is not generally done is owing to a bad preparation of the border and improper pruning.

We have said enough of shelter, we trust, to impress the reader not only with its importance, but its absolute necessity. There is probably but one other branch of the subject of more importance to the vineyardist or the amateur, or even to the person who grows but a single vine. There is a greater necessity for shelter in a cold climate than a warm one, but our conviction is, that some form of it is beneficial every where, even at the sunny South. Each man, of course, must judge of the necessities of his own case, but he will act wisely if he locates his vineyard in reference to this important point of needed shelter.

Our next will be on the *Soil and its Preparation*. We propose following the

subject regularly through all its gradations up to the ripening of the fruit. As the grape has been a study with us, the reader may at times find us a little positive; but that remains to be seen.

Landscape Adornment, No. IX.—THE BEAUTIFUL AND THE PICTURESQUE.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

AMONG modern landscape gardeners the natural style of landscape adornment is divided into two somewhat distinct branches, and are designated the Beautiful and the Picturesque; and although frequently used in common, the desire is to separate or use them for strongly marked differences on the same estate. Thus the beautiful is made use of in embellishing the dress grounds, while the picturesque is considered the most appropriate for those natural forms whose outlines are irregular, and in which no display of art is contemplated. The propriety of blending these two varieties of the same style has not met with very close consideration, or perhaps the sources from which they have evidently been derived have not received that study to which they are entitled.

We like to go to the fountain-head of all subjects that are worthy of investigation, as the most likely mode to develop the hidden meanings that a succession of derivations either overlooks or casts aside; and although our theory in this case may be false, still it is likely to lead to other and perhaps better conclusions.

The natural style of landscape gardening is founded upon the teachings of nature; her examples and hints, assisted by a refined and cultivated taste, are the most productive of pleasing results.

If we study nature closely, we find the two forms of natural landscape adornment plainly illustrated, and we also find them blended in the most harmonious manner; the rough, jagged rock is not out of keeping with the graceful catenary curve of the drooping vine, nor the splintered and twisted oak with the helical curve of the twining vine; the peaceful lake harmonizes with its bold, rock-bound shores as gracefully as where its waters meet the closely shaven lawn, and the beautiful curve of the parabola described by falling water is not inappropriate to the wild gorge. It would appear reasonable that there should be some connecting links or graduations between the infinite beauty of natural curves, and the broken, irregular forms of the picturesque, and that the place of departure from one to the other should be from the straight line; but there are no straight lines in natural forms, no natural illustration of their existence, and we must therefore conclude that any form of construction in landscape art that deals with materials in their natural condition, and introduces the straight line, is at variance with the natural style of landscape adornment; and, however appropriate it might be in that style which is wholly artificial, a true course of reasoning would condemn it in one wholly natural. The use of a natural curved line implies a high standard of beauty, as it expresses more beauty than a line of any other character. The eye curve of the common *soi disant* landscape gardener might be tolerated in the picturesque, but it is false both in principle and practice, and utterly worthless (excepting by guess work) on uneven ground, or on that which is thickly wooded; besides, in adopting any curve which is not a natural curve, we sacrifice the highest form of beauty. The lines of the "Beautiful" are derived from natural curves, and

the beauty of natural curves differs only as one star differeth from another. They may be derided by being called mathematical; so are all lines and forms mathematical, and it is utterly impossible to produce any true style of landscape gardening that shall not be mathematical; a fact so apparent, that a further consideration of it in this light is unnecessary.

The use of curved lines of a natural form might be objected to among practical men as being difficult and expensive to lay out. Practical tests, however, show that a curve laid out by the eye is the most costly as well as the least satisfactory; one is known to be correct and infinitely beautiful, the other carries with it a feeling of uncertainty, and can only approximate to true beauty. Although a curved line, which derives its exquisite grace from its natural model, is perfect in grace and beauty considered by itself, any use made of it that does not carry a good and sufficient reason with it, must be condemned when good taste is considered. That road is not beautiful which curves unnecessarily for the sake of the curve, and that which is already beautiful may easily be distorted and made positively disagreeable by the addition of a very beautiful feature. There should be in all departments of landscape art an expression of value, either of beauty, usefulness, or pleasure; whatever means nothing is much better dispensed with. The use of embellishments is good so far as they express a purpose; beyond that they only serve to point out an uneducated taste. Artificial ornament or decorations, misapplied, are as false in landscape art as in architecture; they cease to be beautiful if the motive is not apparent.

Strongly as we would advocate the use of gracefully curved roads and walks on ornamental grounds, our disposition is to condemn all unmeaning uses of the curve. There is a grandeur in the single, long, graceful curve of an approach, that withers into insignificance the frittering reverses which a vulgar taste would work out from the line of grace and beauty. Like bold effects, or broad masses of light and shadow, the bold, free, running curve will make its impress; and our opinion would be, that he who seeks to gain long curves which plainly tell the story of their location, gains a point in which he will be sustained by variety, effect, and rare good taste.

In the use of the curve as a line of grace in ornamental roads, we must not overlook other inseparable conditions. The curved belt of smooth gravel is not wholly to display the beauty of alignment, or the contrast with the smooth green lawn; if this were all, it must be a failure. The leading feature of a road must be thoroughly practical, and until the highest degree of usefulness is expressed, it is folly to consider either beauty or ornament. The natural curves most applicable for use in the location of a road, are those which nature shows to be best adapted to the passage of moving bodies, the principal ones being the circular, elliptical, and parabolic; but, as compound circular curves, practically considered, are identical with the last two, we should adopt them as combining the perfection of beauty and usefulness, and as displaying that graceful flow so essential to tasteful adornment; it is quite necessary to add, that even and regularly adjusted gradients are the only ones in keeping with such a line of road, the picturesque grades of rural roads and walks being inadmissible.

Our own disposition would be to abandon entirely the use of picturesque lines in road-making, as we can not see the philosophy or economy of building second rate roads through picturesque grounds. The pleasure in using a road decreases in proportion with its character, and if the lines of the beautiful are in keeping with the lines of the picturesque, why should they not be preferred, more especially as they combine the practical and ornamental? Generally speaking, the

improvement of picturesque grounds does not extend beyond roads and walks, and a few rustic embellishments, such as seats, bridges, etc.; any other attempt to interfere with nature will not meet with success. Too little can scarcely be done to natural grounds, nor too much to the highly dressed grounds. There are but few examples of landscape adornment that rigidly adhere to either the beautiful or picturesque; numberless experimental attempts have been made combining both, always failures that mean nothing, and are generally produced by working up the picturesque and neglecting the beautiful until they meet on a common level; it is then difficult to distinguish between them. In the hands of educated taste, the beautiful and picturesque can be harmoniously blended, and there may be any degree of excess of one over the other that is desirable; but he who can not appreciate the beautiful designs of nature, and has not good sense enough to let them alone, or aid her to complete them, lacks one of the qualifications of a landscape artist.

P L A N T I N G .

BY C. W. GRANT, IONA, NEAR PEEKSKILL, N. Y.

THE rules for the planting of fruits are simple and of almost universal applicability, from the herbaceous strawberry to the strong wood of the Apple-tree; and yet more loss by death occurs from negligent or mistaken planting, than from any other cause. In consequence, not only does the purchaser sustain great disappointment and loss, but the seller often much more severely suffers in the reputation of his plants. A new tree may replace the buyer's loss, but the seller's loss is not so confined in limit, nor is it nearly so easily remedied. For all practical purposes, it may be assumed that a good tree or plant will never die except from bad treatment; and the converse is to a great extent true. No tree may be expected to prosper under negligent treatment.

In considering the points of good treatment, the soil may be first noticed. None but good fertile soil, that has been well "aerated" or "weathered" by lying near the surface, should come in contact with the roots; and this, although it need not be sifted, should be fine enough to pass through a sieve. Nothing that is properly called manure should be suffered to come near the roots. Manure that has, by repeated workings in the compost heap, so far returned to the condition of very rich soil or mold as to be destitute of odor or acridity, may be thoroughly worked into the soil that is to lie below the roots, but not so near as to receive their early growth. This may also be placed above them, and in the same relation. Good fertile soil affords the best possible medium in which to obtain a good healthy growth. Its mechanical condition must be observed, having it neither too clayey nor too coarsely or openly sandy. In this a great range is allowable in almost every thing that is planted, only the very adhesive soil must have its compactness frequently broken by working, and must always contain enough of vegetable fibre or mold to secure the porosity that will allow water to pass through it with a due degree of facility.

The sandy soil, on the other hand, must not be so open, in the first place, as to let its fertility fall away and be lost; and it is equally important that the roots shall have sufficient protection from the direct action of the atmosphere. Soil may be so open that roots will tend to take the action of surface wood, and cease

to perform their functions. In many cases not only is the roller indicated over the general surface, but particular attention called for in compressing the soil about the roots. For such cases, a plentiful addition of pretty adhesive compost is the only effectual permanent cure. On very open soils, Apples, Pears, and Grapes will often at first exhibit surprising vigor, but fail, and even die, after the first effort at the production of a crop. A well-prepared hole or border will always obviate this, and from such ground accelerated ripening may be expected to counterbalance the additional care required.

When remarkable vigor is desired, it is best attained by placing well-rotted manure over the roots, with at least two or three inches of intervening soil, so that it may reach their mouths in mild solution; but it may be remarked, in passing, that the most healthful and permanently productive vigor is obtainable by care in cultivation only, without extraordinary enrichment or any forcing process. The normal energy of vegetation will work out its best results, both in the formation of strong, healthy wood and abundance of excellent fruit, when its daily wants are always fully supplied, without ever having the supply in excess. The leaves, by their development and firm, fleshy texture, or the contrary, will very clearly indicate the quality of the expected result, and the great desideratum is to produce an abundance of foliage that shall endure the whole season.

While aiming at the attainment of the judicious mean in planting, it should be borne in mind that too rapid growth at the beginning is as injurious as if it were too weak, and that the means of sustaining a uniformity of growth for a long or indefinite period must be provided for at planting.

The depth of planting is always regulated by the depth at which the plant previously grew. Many kinds have great power of readjusting the "collar" or point where root joins surface-wood, and the age of the tree or plant has something to do with the ability to sustain a great shock to its nature in this respect. Those that root readily as cuttings are least likely to be destroyed by too great depth; but countless numbers of pears on quince stocks and young grape-vines are killed yearly by this cause. The Plum and Peach, particularly in heavy soils, if not killed at once by great abuse in this way, are doomed to a languishing and unproductive existence. It is unnecessary to speak of the kinds which suffer most, for all are greatly injured by disregard of this rule. Even when the intention is right, trees that are planted in recently prepared borders or holes that have been deeply worked are often subjected to this disaster, from settling of the ground after they are planted. This should be provided for by making the soil sufficiently compact below the roots before the trees are set. Young and valuable vines are most frequently of all destroyed in this way; and those which have the best and most abundant roots are more in danger than those which are scarcely more than cuttings. It is desirable, and often indispensable, to have the principal roots of the vine below the severe action of frost, or rather alternation of freezing and thawing, as well as sudden drought. Hence for the vine a special plan has been adopted, which secures always the best results when it is carefully carried out. If the ground has been recently prepared, it needs the compacting spoken of for trees, so that it will settle but little, if at all, during the first season. An excavation is then made, at least six inches in depth, and better if eight, or, in very light soils, ten, and considerably greater in diameter than will give uncramped entertainment to all of the roots that remain after the root pruning, which is always required in well-rooted plants. This soil is to remain in a heap during the season, and the present surface of the hole is to be considered and treated as the

surface in reference to the vine for the first season. To plant the vine, another excavation is made to the depth of four or five inches, and the soil is returned to cover the roots, thus leaving an excavation of the depth above mentioned for one season. At the end of the season the remainder of the soil, or that which was first thrown out, is put back, and from this depth the vine will not receive any apparent check to its growth, and its roots will be kept below the destructive influence of frost or drought.

If the hole is filled up at the time of planting, the vine will be nearly or quite destroyed, or "smothered," as gardeners say. The partial filling up of the excavation that will occur from the breaking in of the sides during the summer, and especially from heavy rains, will be productive of no injury unless it occurs early in the season, when it must be removed. If the soil that is thrown out for the lower depth is unsuitable to come in contact with the roots, it should be spread over the surface of the ground, and good surface soil substituted.

In placing the roots, care should of course be observed to give them the right direction, so that they may be equally distributed through the soil; and in working the soil in around the roots, the fingers must be employed, to do it well. The roots of vines or trees should be placed just where they are to remain, and the soil so firmly placed around them that no cavity among the roots will be formed by settling. All shaking or churning of the tree or vine up and down to get the soil among the roots, should be avoided. None but fresh, moist soil should go into the hole in filling up, and the degree of compactness must be regulated by the character of the soil, that which is sandy *needing* much compression, and that which is very clayey *admitting* but little. At the time of planting, a stake or stakes should be set so as to secure the tree from moving by the wind. Much motion of the top will draw the roots in the soil, and deprive them of their tender fibres.

Vines also should receive the stakes that are to sustain them at the time of planting, for there is danger of injuring, or even destroying, by damaging the roots in setting them afterwards.

In giving these very particular directions for planting, I have had in mind not the thoroughly trained gardener, but purchasers who, in a great majority of cases, are not only negligent and ignorant themselves, but commit the matter to those who are not only utterly unskilled, but have no feeling of interest in the result. These latter are not to be reached by an exhortation in magazine, but the purchasers of trees and plants should be heedful readers of that which deserves their attention, for they have both an interest and a responsibility involved, with corresponding duties from which they can not absolve themselves.

The duty of furnishing our loved ones who are dependent upon us with wholesome and refreshing fruits, is not fulfilled by the mere *purchase* of trees, but demands all the care which is required to place them in perfection abundantly within their reach. The purchaser of every tree and vine by the act incurs an obligation to another party, which in ninety cases in every hundred he wholly ignores, practically at least. He has a lively appreciation, and justly too, of the obligation, both expressed and implied, of the nurseryman to him, and cherishes a large amount of that expectation, which a fairly estimated average of humanity, under the circumstances, would scarcely warrant. He is often disappointed, and clamors—justly.

He ten times more frequently fails through gross negligence or fault on his own part, and he clamors often even more loudly, and the reputation of the nurseryman is damaged without remedy. On the one hand it is called

"robbery ; " on the other it is robbery also, but so much more than robbery that language fails to characterize it.

The one withholds a rich, sensuous delight, refreshing to body and spirit, and enacts a great injustice. The other takes the bread which sustains the body, but, infinitely more, that which sustains the heart and mind, and wanting which, every undertaking must be without that life-giving soul which alone ennobles it, and secures the conscientious employment of MAN's ability.

One important element of success in planting is so generally ignored, that I would call particular attention to it; that is, fall transplanting and "heeling in" for the winter. That this should be so little heeded by nurserymen is not easy of comprehension. Many of our most hardy pears—or those which become so after the second year—are exceedingly liable to damage or destruction by the second winter. The Bartlett may be mentioned for an instance. Our chief object now is, not to speak of guarding against occasional loss, but to point out the means of universal gain. All fruit-bearing trees and vines (and we might safely make the rule much more comprehensive) are greatly benefited by the process ; VINES particularly so. For these, in addition to the other advantages, there are two that deserve particular consideration. First, the roots are in best condition to endure uninjured transportation to a great distance. Second, their vegetation may be kept back until ground that is wet and cold, or that which has been recently prepared, is in the best condition to receive them, so that growth shall go on immediately without interruption.

The full consideration of this subject demands an entire chapter for its elucidation ; and after this is well understood, the question as to propriety and comparative advantages and disadvantages of fall and spring planting will be nearly disposed of; or, rather, will be so readily understood that the manner of obtaining the advantages of both will not be a disputed question.

[The reader will find several strong points made in the above, which are worthy of special attention. Too much stress can scarcely be laid upon the preparation of the soil, especially in planting orchards and vineyards which are expected to last for generations : no after surface treatment whatever can compensate for neglect in this one particular. Not less important is planting, as respects depth, disposition of the roots, and filling in. We have heretofore expressed our conviction of the evil of deep planting, especially in reference to dwarf Pears : it has had more to do with the failure of dwarf Pears than any other one thing that can be named ; deep planting, indeed, may be called the "great evil" in pomology. The settling of the soil is another matter bearing on this subject, to which attention is very properly called. A tree properly set, in a well-prepared soil, will not settle more than an inch, and this, too, without stamping or pounding the soil with the foot. The filling in immediately around the roots should consist of soil broken up finely with the spade or the hand, and should be prepared beforehand. The soil should be worked in around *all* the roots with the *hand* ; no man, indeed, should attempt to plant a tree unless he is willing to put his hand to it. Planting, again, should never be done when the soil is *wet*; it is in good condition, in this respect, when it will break up readily in the hand. It will be seen, too, that stakes, when necessary, are recommended to be put in at the time of planting, and this is important ; for in putting them in afterward the roots are not only often injured, but the whole of them are frequently drawn and displaced, to the great injury of the tree. Swaying to and fro, and "churning," to settle the soil about the roots, are practices that can not be too strongly condemned ; it is our

"private" opinion that a man who does these things ought to be "spanked." Whatever is done in the way of planting a tree ought to be done in the most thorough manner. A man who purchases a good tree thereby assumes the moral responsibility of providing suitably for its future welfare.—ED.]

CLUB-ROOT IN CABBAGE.

BY A JERSEY MARKET GARDENER.

It is just as much the province of a horticultural journal to disabuse the popular mind of an error, as it is for it to advance a new or improved system of culture. One of the most general and deep-seated of these errors is the notion that the cause of this troublesome feature in the culture of the cabbage crop is in consequence of using hog-manure as a fertilizer.

I will briefly state a few facts why we consider this a radical error. In the district from which I write I presume there are at least two hundred acres annually under cabbage crop, embracing every variety of soil, from light sand to deep clayey loam, and yet in every case we have "club" if we plant cabbages on the same ground two years in succession, *except on lands wherein the soil is impregnated with oyster shell*: there we may plant successively for fifty years and never see it, and that, too, without any restriction about manure. On the other hand, I have (for convenience) used cow-manure solely on one of my places, and in another, horse-manure, largely mixed with hog-manure; and yet, whenever we, by accident or otherwise, transgressed the rule of planting only in alternate years, just so sure were they affected by club-root, in both places alike. This, of course, only on ground where there was no oyster shell deposit.

Reasoning from these facts, our theory is, that an insect is in some way attracted by the cabbage plant when growing the first season, but is then powerless to injure; but that it then deposits its eggs in the soil, which forms the insect ready to attack the roots on being planted the succeeding season. We can not vouch that the above is correct, but the facts seem to point to no better solution. We explain the exemption from club-root in soils containing the deposit of oyster shell by the belief that the insect can not exist in contact with lime; therefore we have long since come to the conclusion that the reason of club-root in cabbage is solely caused by *an absence of lime in the soil*.

Being so thoroughly convinced that the above is the only and true cause of annoyance, we have for the past two seasons used lime extensively, (at the rate of one hundred bushels *unslackened* oyster shell per acre,) and the results, thus far, convince us that there is no doubt that we can thus artificially form a soil where cabbages or cauliflowers can be grown successively, without the attendance of their destructive enemy, club-root.

The successful growing of this crop in this district is of more importance than many are aware of. The two hundred acres annually devoted to cabbages will average five hundred dollars per acre, or something near one hundred thousand dollars for the whole. This is only from one Jersey district. New York island and Long Island, I presume, will figure up as much more.

I hope I have not forestalled my quondam friend, Mr. Roessle, of celery renown, in divulging his "secret" of "how to grow a cabbage crop without club." But he seems to be so long in thinking about it, I was afraid the "interested"

public would be getting impatient, and so let the cat out of the bag; but whether or not it is his "cat" I am unable to say.

[We think it has been sufficiently demonstrated that the "club-root" or anbury is caused by a species of curculio, and that hog-manure has nothing to do with it. Such being the case, we should naturally expect "club-root" to prevail in proportion to the number of years cabbages are grown on the same piece of ground; provided no suitable remedy is applied. "A Jersey Market Gardener" here tells us that *shell lime*, according to his experience, is a certain remedy; and, knowing him as we do, we have the most implicit confidence in every word he says of his own knowledge. The announcement of a sure remedy for this formidable disease will be of incalculable value to a large class of our readers. Whether he has forestalled Mr. Roessle we can not say; but, Mr. Jerseyman, when you undertake to play with "cats" you must look out for a "scratch."—Ed.]

IMPORTED ROSES.

BY ANDREW S. FULLER, BROOKLYN, L. I.

In this country the propagation of the Rose has been much neglected until within a very few years. We have been supplied mostly by importations from Europe; but we look for better things in the future. Of course, we shall be obliged to import new varieties so long as we neglect to produce them ourselves, or allow our simple vanity to get the better of our judgment.

We have always given the preference to a plant that was brought out in Europe over those of our own country. The Madame Trudeaux Rose, which originated in Bloomingdale, N. Y., was christened with a French name, then sent from New York to France, and there made known to the world, before Americans could be induced to purchase it. This is but one case among the many that are constantly occurring, to the chagrin of those who get a peep behind the scenes.

The question for us to consider at the present time is, how shall we supply ourselves with good, strong, well-grown plants? Shall it be by importing them, or shall we grow them ourselves? Are the imported plants better than those grown in this country? Again, can we import them cheaper than we can grow them? We think not, for several reasons; and we believe that the best way for us to get a good supply of roses is to turn our attention to their propagation, and give up importing altogether, excepting for the purpose of obtaining new foreign varieties.

The stock on which the French nurserymen bud their roses is enough to condemn them from the beginning, as they generally use the wild rose of the woods, which is dug up by the farmers about the country, and sold to the nurserymen for a mere trifle. These stocks are almost destitute of small fibrous roots; yet they seem to possess vigor enough to produce a very good growth for two or three years after being transplanted; but after that they are of very little use. Taken as they are from the shade of the forest or hedge-rows, and planted in the nursery, where they are exposed to the scorching sun, the bark becomes so dry and hard that it refuses to expand, or allow the wood to increase in size, or the sap to circulate. When they have been exposed to one long sea voyage, there is but little left of the original vigor they may have once possessed.

The roses that we get from France on their own roots are generally very small and weak, and they suffer much in transportation; besides, there are but few varieties that grow as strong or bloom as well on their own roots as when budded on good strong stocks.

Some of the English rose growers use the Manetti stock, (which is the best kind known;) but they ask more for their plants, which are not generally as large or as well grown as those we get from France. Besides, the change from the cool, moist climate of England to our hot and dry one often produces a deleterious effect.

The risk of loss by sea voyage is one great drawback in importing roses; for it often occurs that we sustain a loss of one-half, either by their becoming too dry or too damp. If you have a package of choice varieties, the rats will be pretty sure to get at them and make sad havoc. We must meet these losses with as good grace as possible, for we can get no insurance against rats or long voyages.

The relative cost of imported roses and those grown here is worthy of our attention.

First-class, large, two-year-old plants, budded on the Manetti stock that has been twice transplanted, can be bought here for two hundred dollars per one thousand. Now let us see what it costs to import the same number from Angers, in France, which is supposed to be the Rochester of Europe.

| | |
|--|----------|
| 1,000 plants cost | \$70.00 |
| 2 boxes, and packing, | 8.00 |
| Freight from Angers to Havre, including insurance, | 16.00 |
| Freight from Havre to New York, per steamer, on 2 boxes, of one ton each, | 40.00 |
| Custom-house charge, | 1.50 |
| Total, | \$135.50 |

This is about the average cost, one year with another.

We have but about six cents difference in the cost of each, and this in favor of the imported plants. But who will say that the plants grown here, if of equal size, are not worth far more than the difference in price, to say nothing of the risk in importing them? Our experience leads us to believe that the plants grown here are worth double those imported.

This is no hasty conclusion, but one we have arrived at by dealing in both kinds for the last ten years. We have found that the imported plants did not give satisfaction to our customers, while those that were grown in this country have; and the great question with all nurserymen should be, how best to please their patrons.

[It is undoubtedly true that our nurserymen depend mainly on the foreign supply for their stock. Many believe they can import roses cheaper than they can propagate them, and are governed chiefly by this consideration; but Mr. Fuller's figures would seem to show that the saving is not very great, after all. There are comparatively few successful rose propagators among us; not alone because the rose is difficult to propagate from cuttings, but because they will not take the trouble necessary to insure success. We have no doubt at all that, on the whole, roses grown here are more durable and give more satisfaction than those imported, especially those on their own roots. Unlike Mr. Fuller, we believe roses on their

own roots are in most respects to be preferred to those budded. A few feeble growers may be better budded, and this may be what Mr. F. means. But, at all events, let the domestic trade be encouraged.—ED.]

GRAFTING THE GRAPE-VINE.

BY GEO. W. CAMPBELL, DELAWARE, OHIO.

I WAS both amused and interested in reading the article in the January number of the HORTICULTURIST in which "El Medico" records the serious difficulties attending his attempts at grafting the vine. And I may add, that my own experience in that line for several years would furnish a chapter of failures but little short of his. I think I grafted a few vines every season for a period of about five years, and during the whole time succeeded in making but *one* grow and form a good vine; and this *one* only by disregarding the usual directions given by professed experts. Instead of waiting for the formation of leaves and discontinuance of the excessive flow of sap, *I grafted this one early*, before the flow commenced. Since that time I have grafted thousands of vines, with nearly as good success as attends any other kind of grafting. I have practised saddle grafting, whip grafting, and several fancy methods, but have found the common cleft grafting, carefully performed, the most reliable and successful. For large, strong stocks I hardly think tying necessary, though a covering of clay or grafting-wax is undoubtedly beneficial. For smaller stocks, I use only paper covered with grafting-wax on one side. I could not recommend copper wire in any case. I have also grafted on various stocks, with very little difference in result, using indiscriminately the wild frost-grape of the woods, the Catawba, Isabella, Concord, and some others. I think if "El Medico" will carefully set his grafts early in the spring, before the great flow of sap commences, he will be able, another season, to make a better record. I do not say grafting the vine *can not* be successfully performed after the leaves have formed; but it is a fact that, up to the present time, notwithstanding many trials, I have never succeeded in doing it.

[At last, El Medico, you have an authority that will let you graft as early as you want to. We feel under obligations to keep you posted. Try all, and gather material for another chapter.—ED.]

CULTURE OF THE DAHLIA.

BY ANDREW RICHARDSON, FORDHAM, N. Y.

DEAR EDITOR:—I wish that by a word of mine I could raise an army of amateurs that would infuse some additional vigor and emulation into the cultivation of the noblest of our autumnal glories, the Dahlia. I find the principal objection to a more general cultivation is, "*Oh! too much trouble and difficulty!*" Now in my floral vocabulary there are no such words, and it is with the view of dissipat-

ing this erroneous impression, as well as to induce others to take hold of the delightful pastime, that I offer you my system of culture, which is acknowledged to be successful; and instead of "trouble and difficulty," I guarantee to all who will follow it not only equal success, but the purest and most positive pleasure. That a certain amount of labor and attention must be bestowed is undeniable, but little more than is necessary to most of our floral pets when properly cultivated.

Amateurs, who have space only to grow six, twelve, or twenty-four plants, may, by devoting an hour morning and evening to their requirements, do all for them that is necessary to insure a good bloom. Others, with more time at their disposal, and who enter *con amore* into all the minutiae of the thing, must necessarily reap a corresponding advantage—a larger amount of gratification.

As we may in vain look for a good or true bloom from a weak, sickly plant, our main object, during the three months after planting, must be to produce strong, healthy, robust plants, to insure which, our first attention must be turned to the preparation of the ground.

Select an airy situation, away from large trees, and as much as possible a *dead level*; trench it a couple of spades deep—*more*, if you take pleasure in it, as I do, my Dahlia ground being three spades deep; keep all the good soil on the top, the subsoil being merely opened up and allowed to remain in its place, forming a large receptacle or reservoir for the rains and waterings the plants may receive. Such preparation will save *many waterings* which otherwise would be necessary, and where, perhaps, water might be scarce. As an instance of its great advantage, last season we had a two months' spell of dry weather—not a shower to wet the surface of the ground; notwithstanding, my plants grew vigorously without once being watered, and without showing the least indication of suffering during the entire drought, all they had being an occasional syringing overhead to check the red spider and thrip, which warm and dry weather is certain to produce, and which must be checked to insure healthy plants. Besides, when we consider the fact that water constitutes upwards of 70 per cent. of the substance of the plant when in a healthy growing state, we at once perceive not only the advantage, but the necessity for deep trenching. This said trenching, which is the heaviest portion of the whole process, should be done in the fall of the year, leaving it as rough and open as possible to the action of the frost. If not done then, begin operations the moment the ground is workable in spring, leaving it in said rough, open condition till it is wanted in May.

In the meantime, prepare a sufficient quantity of manure, as much as will cover the entire surface three or four inches deep; the older you can get it the better. *Cow-manure* is preferable to horse, it being of a cooler nature; but as it can not always be had pure when wanted, we must take what we can get, *mixed* with horse; or horse alone, if sufficiently decomposed, will do well enough in the absence of better, as a foundation to work upon. My muck-pit, before the season is over, is pretty well filled with all the offal and refuse of the house and garden I can scrape together; nothing is lost or thrown away, but all returned again to the ground whence it came. In the fall, I get a few loads of *cow-manure* if I can, *horse* when I can not, and in November make up a heap alternately of a layer from the muck-pit and a layer of manure, allowing it to remain so all winter. In early spring it is chopped down and turned over, thoroughly intermixing it, and again formed into a heap. In six weeks the same process is repeated, when, by the time it is wanted for the Dahlias—about the middle of May—it is in prime condition; much of it corn, dahlia, and hollyhock stalks, being but half decomposed, not only

tends to keep the soil free, but we can give the Dahlia nothing that its roots will more lovingly cling to and feed upon.

We will now leave nature to perform her portion of duty to the ground and manure heap, while we are looking after the roots. During the last week in April, when there is no longer any likelihood of frost, I dig a shallow trench in any bit of ground not immediately wanted, and place the roots in it closely together, working the soil carefully in among the tubers until the crowns are covered about half an inch. In about a fortnight or three weeks the shoots begin to appear, and when three or four inches long, I lift the roots, and carefully separate the shoots, leaving a small portion of the tuber to each when it is possible. They are then put into small-sized pots, no larger than will freely admit the portion of bulb attached, using a mixture of leaf mold and road sand, half and half, passed through a sieve. Stick a tally with the name into each pot; give a thorough watering (use rain water) with a fine rose, and when the foliage is dry, place them in a cold frame; shade from the sun, and keep air from them two or three days; then give them air daily, by raising the upper end of the sash a couple of inches, closing it again at sundown. Keep a good look out for thrips, which will find their way in and do damage, if not destroyed. Should the weather be warm and dry, and evaporation consequently considerable, give the foliage a gentle sprinkling. Examine daily the soil in the pots, and water those only that require it, guarding against too much, which would certainly damp them off at this stage of their existence. Morning is the best time for this application of the watering-pot, fortifying them against the heat of the day, and, with a current of air playing gently among them, they are in fine condition for closing up again at night. In dull, dark weather, give plenty of air, and, should a moderate shower come up, let them have the benefit of it. In ten or twelve days they should be pretty well rooted, and ready for change of quarters. Examine each pot, by placing one hand over the soil, allowing the stem of the plant to go between your fingers; turn the pot upside down, give it a tap on the side of the frame, when the ball will rest on your hand exposed to view; if the roots are through the soil, "all's right;" no more nursing is required; return it to its pot, and place it where it can only get the morning sun for a few days, watering it well; after which it may be exposed to sun and weather as they may come. *It is ready for planting out.*

Such is my amateur method of making young plants; and I seldom lose one, particularly since I have used "frigi domo" as a shading material. It is a thin, soft substance, like flannel, composed of hair and wool, an excellent non-conductor, preserving a cooler and more equal temperature than I have before obtained with mats or muslin, and admitting a soft, agreeable light.

While the plants are rooting and hardening off, let us return to the Dahlia ground, which we left in a rough condition. Level it down, and point in the quantity of manure already mentioned, mixing it well with the soil. Let me again impress the advantage of working the ground to a perfect level, that the rains and waterings may run *into* and not *off* it, and that the roots all around may enjoy equal advantage.

Divide into beds four feet wide, allowing a pathway of sixteen or eighteen inches; then along the middle of the bed drive firmly into the ground centre-stakes five feet apart, close to each of which plant a Dahlia, any time from the 20th—not sooner—of May to the middle of June. A point of great importance is, from now to the end of the chapter, to be strictly attended to. After the completion of the beds, *never allow a foot to be placed upon them*; let the driving of the stakes and planting be done from the pathway, *making a long arm*; nothing

being more detrimental to success than an undue pressure on the roots. To facilitate operations, place a *brick* in the centre of the bed between each Dahlia as a stepping-stone, nothing more being necessary for free and easy movement among the plants, which will soon grow to within easy reach.

For the benefit of beginners who desire to purchase young plants, I give you a list of a few of the *older* varieties—but nothing the worse for that—which I can with confidence recommend, having proved them, as well as many other names which are at your service, to be well adapted to this climate, and may be had from any importing nurseryman at a moderate charge.

Triomphe de Roubaix, buff, white tip; large and fine. Dr. Bois Duval, scarlet; a splendid flower. Sir H. Havelock, brilliant scarlet; best of its color. Lady Popham, white, lavender edge; most exquisite. Baron Alderson, scarlet, white tip; large and splendid. Grand Duke, deep lilac; very fine. Mrs. Edwards, lilac; very symmetrical and constant. Prince Albert, white, purple edge; constant and good. Lollipop, salmon buff; splendid form. King of Yellows, clear yellow, and very constant. Miss B. Coutts, fawn; fine form and substance. Dr. Gully, yellow, crimson tip; fine. Imperatrice Eugenie, pearly white, crimson tip; *extra extra*. Lady Paxton, red, drab tip; extra form and substance. Cherub, brilliant orange; a gem. Empress, blush white; delicate and fine. The Nigger, very dark; constant. Preëminent, dark plum; rich and very fine. Anne Boleyn, white; a noble flower. Duchess of Wellington, creamy white; extra double. Lord Bath, dark maroon; fine form. Ruby Queen, bright ruby; fine form. Miss Caroline, white, laced with purple; good and constant. Princess Wagram, orange; very desirable. Colonel Wyndham, dark red; first-rate.

To those who wish to add to their collection *newer* varieties, I can equally recommend the following:

Madame Alboni, lilac, tipped with white; extra fine. Chairman, pale orange buff; first class flower. Lilac Queen; finest of its class. Marchioness of Aylesbury, white, purple edge; very fine. Sir C. Campbell, dark maroon; large and very fine. Daughter of the Morning, mauve; a perfect gem. Pandora, claret, bronze tip; large, constant, and fine. Mrs. Bailhache, pure peach; extra form and substance. Dandy, white, striped with rose; original and fine. Kean, crimson, tipped with white; extra fine. Hon. Mrs. Trotter, white, with picotee edge; extra fine. Lady Mildmay, pure lilac; very good. Sir Joseph Paxton, golden yellow, first class.

[The above article, from one of the most accomplished and successful amateurs in the country, we welcome with peculiar gratification. The question has often been asked, "How does Mr. Richardson grow such Dahlias?" and as this article is to be continued, our readers will be put in possession of all the details.—ED.]

NATIVITY OF THE DELAWARE GRAPE.

BY G. H. B., NAZARETH, PA.

MR. EDITOR:—It is really amusing to see the various and conflicting notions about the Delaware grape; but, depend upon it, it is nothing else but a North American native grape. Any one who is accustomed to see large collections of

the foreign grape (*vinifera*) growing in the open air, (under glass they do not develop their characteristics,) will see at once that the home of the Delaware is in the *Occident*.

The grape-vine has been my hobby from my earliest childhood; and I have therefore always paid particular attention to it, not only in my native country, (Germany,) but also in France, Spain, Italy, and Switzerland, as also during my little stay (forty-two years) in Pennsylvania. Here I have cultivated, during the last thirty years, on a piece of ground one acre and a quarter in extent, and trenched throughout three feet deep, several hundred kinds, with the hope to find one variety at least that would suit our climate, but without success. I have one variety, which I imported with fifteen others from the Cape of Good Hope, which does tolerably well, only it is too late for the climate of Pennsylvania. Now among all these, and also those which I have seen abroad, there was not one that looked like the Delaware, or any other American grape; and if that vine in Frenchtown was imported, it does not prove, therefore, that it was a foreign variety. I have myself received by importation from the Baumanns, at Bollviller, France, and Bronner, Germany, American grape-vines (Isabella and Major Long's) with foreign names.

But I believe that the Delaware grape may yet be found growing in its wild state somewhere on the Ohio, as Doctor Schoepf, (the botanist,) who travelled in the United States during the years of 1783-84, found a grape on the sandy shore of the Ohio River, near Pittsburgh, the description of which corresponds exactly with that of the Delaware grape.

The Catawba, which then was called the Cherokee grape, was cultivated, with many others, at Bartram's Garden, and the York Madeira he found wild near Baltimore.

One of your correspondents believes that the Delaware is a seedling of the Traminer, (of which I have cultivated four varieties, the Red, the Black, the White, and the Spice Traminer;) but that is not the case, as no seedling of the *Vitis vinifera* will do better in our climate than the parent of it has done in the open air, as I know from many years' repeated experience.

Another judges the Delaware wine "equal to Johannisberg." I am glad to hear it; he must be one of the favored ones if he has tasted true Johannisberger, as that article travels to the cellars of kings and princes exclusively. But to have an idea of the preciousness of that wine, we have only to take into consideration the price which is paid for it: for instance, the king of Prussia obtained a stueckfass, (a cask which holds about 250 gallons,) for which 12,500 florins were demanded, (twelve thousand five hundred florins.) The Riesling, of which that wine is made, is cultivated elsewhere in Germany, but no Johannisberger is produced. It is the favorable locality to the Rhine, with its warm and sheltered exposition, and the great care to press *none but perfectly ripe and sound berries*, which give that excellence to its wine.

One thing more, and I have done. I do not give this as something new, for there is nothing new under the sun; even the ringing of fruit-trees and grape-vines was already practised by the ancient Romans, and later by the French and Germans, as also the renewal system, which was accurately described on the continent of Europe fifty years ago and longer.

[The above we esteem a valuable and interesting contribution to the "grape question." The opinion of a man who has made the grape a hobby from his earliest childhood, and who has travelled through the principal grape countries of

the world, is entitled to more than a passing notice. The remarks in reference to the Catawba are of peculiar interest; we have other testimony tending the same way, which we shall lay before our readers in good time. We are obliged to you for the German catalogue; we find in it the Catawba, Isabella, York Madeira, and other familiar names.—Ed.]

THE ORCHARD HOUSE.

BY DANIEL W. COIT, NORWICH, CONN.

[THE following is an extract from the Report of Mr. Coit to the American Pomological Society, and will be of interest to our readers. We paid Mr. Coit a visit last summer, and are enabled to state that his success is most decided. Nothing could be finer than the condition of his trees, except it be the quality of the fruit, which was large, handsome, well ripened, and of the highest flavor. Many specimens measured nine and ten inches in circumference. We expect to hear again from Mr. Coit on this subject.—Ed.]

“Thomas Rivers, a nurseryman of extensive practice and experience, residing at Sawbridgeworth, England, (well known to our nurserymen,) first introduced to the public this new method of growing fruits, (I say that he was the first to introduce it as a system, with instructions to carry it out extensively.) He published in 1852 an unpretending work of a few sheets, which he called ‘*The Orchard House, or the Cultivation of Fruit-trees in Pots.*’ This work fell into my hands some three or four years later; it was clear, practical, commanding itself to my judgment, and I was led to put it in practice by having potted some twenty or more trees; but having then no special arrangement for their proper treatment, they were neglected, became diseased, and were finally abandoned. A year later, however, I took the matter in hand more thoroughly, and ordered a hundred fourteen-inch pots made expressly for the purpose, the bottom being pierced with large holes for the emission of roots; into these pots the trees were placed, consisting principally of peaches, with but few nectarines, plums, and apricots. The results of the first year or two (having had disadvantages to contend with) I pass over, remarking only that for the two years preceding the present, the trees were well conducted for their health, form, and future usefulness, and gave, a part of them, a tolerable return of fruit.

“Having had occasion the past year to erect a forcing house specially for Muscat grapes, I concluded to extend the plan so as to embrace under the same roof a division for a peach house also. The plan adopted was substantially one of the largest class of span-roofed houses recommended by Rivers in the last edition of his ‘*Orchard House.*’ The dimensions of my house are seventy-eight feet in length by twenty-five feet in width, standing north and south. I have only occasion to speak here of the section appropriated to the stone fruits, which is thirty-five feet in length by twenty-five feet in width, a glass partition dividing it from the grapyery. The entire house is heated by Hitchings’ apparatus, the peach division with two rows of four-inch pipe, and the grapyery with four rows of the same; one boiler furnishing heat for the whole house, though by means of valves each division may be worked independently of the other.

“I now proceed, as was proposed, to show the result of the fruits grown in this house. It has been stated that the trees were in fourteen-inch pots, and three years

set out. They were, besides, judiciously cut back, to give a compact, well-formed head. Rivers' instructions in this important particular having been followed from year to year, every tree had an abundance of fruit buds. The fire was lighted the middle of February, and the trees were brought from their winter quarters and placed in position—about sixty in number. Of these, forty-five were the large trees spoken of, and these would have been sufficient—just about the proper quantity to remain permanently; but having some smaller trees, but one year set out in boxes, these, to the extent of fifteen, were placed between the pots for a time. When the house became rather crowded with foliage, they were removed to give a more free circulation of air. The trees blossomed uniformly and profusely in April, and soon after set their fruit in much greater quantity than was necessary. The thinning process was commenced early, but was not concluded until the stoning was supposed to be over, and all fears from dropping were at an end. This remark as to the setting of the fruit applies more particularly to the peaches and nectarines. The plums did not set quite so well, but yet ripened a fine crop, which remained for weeks ripe on the trees, and were most delicious in flavor. The apricots (three trees only in number) blossomed and set their fruit well, but nearly the whole dropped; they require even more air than the other trees.

"The peach-trees have maintained perfect health, the foliage fresh and vigorous, and they have ripened a large crop of fruit, averaging on the older trees about fifty, and on the smaller about a dozen specimens; the nectarines ripened from eighty to a hundred. They have been in eating about six weeks, and in the greatest abundance; for fifteen or twenty days, a peck to a half bushel might have been picked any day. With a somewhat different arrangement in bringing the trees at intervals into the forcing house, the season might be prolonged to three months, or a month longer than the present season.

"As to the size and flavor of the fruit, it has surpassed my best expectations. The Grosse Mignonne, Barrington, George IV., and Early Crawford have given rather the largest specimens, many having reached nine to nine and a half inches in circumference, and the size very uniform on the same tree. A portion of the peaches were removed to the open grounds about the middle of June, to see if they would be improved in quality, but the flavor generally of those ripened entirely within the house left little to be desired. It should be remarked, however, that the house (with large ventilation) was left, after May, open night and day.

"In Mr. Rivers' work referred to, there is no suggestion made of any use of the 'orchard house,' beyond that of getting a single crop of stone fruit from it in the course of the season; and to those who would confine themselves to a cold house, this is all that could be accomplished. Now I propose a modification of the plan, by which all the advantages of the 'orchard house' for stone fruits shall be preserved, while a full crop of grapes may be obtained from the same house the same year. For this, however, the aid of forcing power will be necessary. I should proceed in the beginning just as it has been stated I have done the present season, by starting the potted trees in February by fire heat; early in June I should remove all into the open air, and convert the house forthwith into a retarding house for grapes, filling it with potted vines which had been prepared for the purpose. This growing of grapes in pots is another experiment which has hardly been entered upon as yet, but is destined to very useful results not to be accomplished by vines in borders. It is not generally known that more grapes can be grown under a given amount of glass, from vines in pots two years old, than from vines in the border of twice that age, or in their best bearing condition. In the house already described, thirty-five feet by twenty-five, but twenty-four

vines in the border would find proper room, and these, when fully grown, would not (taking one year with another) give over twenty pounds of grapes to the vine, or five hundred pounds for the entire house; while in pots, three times the number of vines would be equally well accommodated, giving, on an average, ten pounds each, or seven hundred and fifty pounds. This is quite within Mr. Bright's estimate, who says, in his recent work on the grape, that he can now double the quantity of grapes in pots that can be grown in the same space in borders; and I have myself, at this moment, Black Hamburg vines in fourteen-inch pots, with twelve to fourteen pounds of fruit on them, averaging a pound and a half to the bunch, ripe on the vines for two months past. But to go back: I have supposed my house filled with vines and pots in June; in the autumn, as required, the fire would be lighted until the grapes were ripe, say in November. Now is perceived the advantage of this mode of culture. The pots being under perfect control, may be removed to any dry, airy room, where, if there is the means of regulating properly the temperature, the fruit may remain in good condition on the vines through the winter; for myself, in this particular I am well prepared, having extensive front rooms specially constructed for the complete control of the temperature so far as the prolonged preservation of the fruit is required.

"One of the most important considerations in connection with the growing of stone fruits in pots under glass, is the entire protection afforded them from the attack of insects, and from diseases which render their cultivation in the open air precarious, if not impracticable. No atmospheric changes affect them, neither are they subject to yellows, or the curl of the leaf; and the constant course of syringing, which forms an indispensable part of their treatment, protects against the attacks of curculios, as well as of aphis, fretters, thrips, and worst of all, red spider."

THE VERBENA.

BY A. VEITCH, NEW HAVEN, CONN.

In the *HORTICULTURIST* for January of the current year there is an article on the Verbena, by J. Pentland, Baltimore, which is worthy of attention by the lovers of that flower, as it contains some hints, on their cultivation especially, which, if generally practised, there would be less occasion for complaint of the want of success in growing them. Thus far we are disposed to be complimentary; but in regard to the charges brought against European growers, and English in particular, we humbly think it wholly unprovoked, and therefore might have been spared. It seems to us to have originated in petulance, or disappointment at not being so successful in that line as to set his own, beyond all question, at the top of the list.

If it could serve a good purpose, it would not be amiss, perhaps, to have a little badinage with regard to the very "aristocratic" names European florists sometimes give their seedlings, as well as some of the same class on this side; but as all are agreed that seedlings must have some kind of names, it becomes a question of the most trivial importance as to whether they are designated by the title of lady, lord, or duke, or by belle, Mrs. or Mr. this, that, or the other thing. And we aver that European growers adopt such names, in preference to others, from the fact of their being at hand, current in their countries, and as befitting as any others which could be substituted. "Lady Palmerston" does as well for such a

purpose, and sounds as euphonious, as "Mrs. Cyrus W. Field." And perhaps both are better than "Leviathan," reminding us, as that name always does, of that nondescript creature which a grand old writer says "could not be drawn out with a hook," nor "his skin filled with barbed irons, or his head with fish-spears." Great Britain has as little brag about her as the Great Republic. And, moreover, the English growers do not intend to give offence to their American friends by sending among them plants with such names. Not by any means. And we can tell Mr. Pentland that it is from conventional associations rather than believing that there is much in a name, that such practices obtain among them. So soon as he can raise a batch of seedlings superior to any thing yet out, he may be sure they will give him an order for his stock, utterly regardless of the names by which they may be designated, or what they may cost.

"Are we dependent upon the Europeans for all of our best Verbenas? I answer emphatically, No!" In the name of common sense, what need is there for your being so? You perhaps need not be told that America is unspeakably better adapted to the Verbena than England,—delighting as they do in a warmer climate than that country affords; and it is far more difficult to obtain seed there than here. Does not the fact that you are indebted to European growers for so many of your best varieties imply that there is "something rotten in the state of Denmark," something wrong in the way in which matters are managed here? In England, they have an approved standard for almost all florist's flowers; and seedlings generally, if considered meritorious, are submitted to the censorship of a competent person, or to a class of persons every way qualified to decide upon the merits or demerits of such. When their qualities are tested by reference to such a standard, by the most approved judges in the country, their owners are put in possession of such judgment, which, if satisfactory, is generally appended to their names in advertising them for sale; while those which do not come out of such an ordeal with credit, and there are many such, are consigned to their "proper place." It will at once be seen that this acts as a check on the vender, and a safeguard to the purchaser. Hence the value of a "European opinion." Would it not be well to have such a practice in good working order in this country? Very likely it would be the means of abridging many a florist's catalogue, "a consummation most devoutly to be wished," and sometimes prevent purchasers from being taken in. At present the most of growers seem to rely too much upon their own judgment, (in many cases as good as can be obtained,) and descent upon the merits of their own "bantlings."

"I thank thee, Jew, for teaching me that word."

And just because having originated with themselves, they must be good, and can not be any thing else.

With regard to the criteria by which to judge the Verbena, Mr. Pentland's are good as far as they go, "A constant bloomer, a good grower, and one that will throw its blooms above the foliage of the plant, and that will not fade when the sun shines upon it for the first time." The last point most assuredly ought to have greater weight with him in judging some of the imported varieties, of which he says, "The first sun scorches the flowers, and they give no satisfaction during the whole summer; but toward autumn, if perchance they live, there may be a few good blooms, and before we get another look at them the frost has destroyed them." Why not as well have said that such are not suited to our climate? For in this category there are likely to be many which, in the countries where they originated, with less of intense sunshine than we have here, may be as good as

those which give satisfaction, and, in brilliancy and beauty of color, far superior. Such, it would seem, are those referred to by him, which, "in the spring, growing in a pot, are really splendid." There are many flowers truly beautiful in Europe, which, when brought here, are not worth growing; but how can the problem be solved as to whether such will succeed here or not without a trial?

It may not be out of place to subjoin "Glenny's Properties of the Verbena;" and although not perfect in every respect perhaps, are nevertheless worthy of the attention of those interested in the improvement of those flowers:

1. The flower should be round, with scarcely any indentation, and no notch or serrature.
2. The petals should be thick, and flat, and bright.
3. The plant should be compact; the joints short and strong, and distinctly of a shrubby habit, or a close ground-creeper, or a climber; those which partake of all are bad.
4. The trusses of bloom should be compact, and stand out from the foliage—the flowers touching each other, but not crowding.
5. The foliage should be short, broad, bright, and enough of it to hide the stalks.

Taking this as a standard by which to judge the varieties in cultivation, it will at once be seen that a whole host of them would be consigned to oblivion, and some possessed of one or more properties would be found deficient in others; while no one in existence would be found perfect in every respect. Where is the perfect Verbena, when measured by the ideal of perfection? It has not yet found its way into Connecticut, nor yet to Baltimore. After all, there is a higher point to be reached before perfection is gained; and it would be well for all concerned, were they to strive to be first at the goal, rather than spending time pelting fellow-laborers in distant fields with bad names; or questioning the motives of those who have already done much, and are likely to do more, for the improvement of the Verbena. And we would advise all the growers of this flower to hold fast to those which are good wheresoever raised, and discard every thing inferior, regardless of names and high recommendations.

[We do not understand Mr. Pentland as objecting to our English cousins adopting lordly names for their plants, but to ourselves being too much led by them. Mr. Veitch gives a very good reason why they should adopt such names in England, and we can readily perceive the propriety of it. We do the same thing here; that is, we seek to name our plants after distinguished individuals. But the point made by Mr. Pentland is, that we patronize foreign plants to the neglect of our own; and there is a circumstance mentioned by Mr. Veitch, which, no doubt, has much to do with this, and that is the fact that plants in England have to pass the ordeal of a censorship, which indorses their character, for that climate at least, and gives us a degree of confidence in them even here. Such a censorship is much needed here, composed of persons entirely competent and honest, and altogether above being bribed. We mean to give more attention to this aspect of the case. But there is a fact bearing still more strongly on the subject, not alluded to by either party, but which they may yet bring out. Another correspondent has expressed a desire to speak on the subject, and we prefer to let him do so without furnishing him with hints. There is something in the subject worthy of discussion.—Ed.]

DESIGNS IN RURAL ARCHITECTURE, No. X.—RURAL OUT-BUILDINGS.

BY GEO. E. HARNEY, LYNN, MASS.

We have a few words more to offer at this time with regard to these structures. Although in those designs which we have thus far presented we have confined ourselves entirely to structures for ornament, yet by no means have we left out of mind those other adjuncts to a country place, which serve a useful as well as an ornamental purpose.

There are the wood-shed, the ice-house, the dairy, the hen-coop, the accommodations for his majesty Sir *Sus*, and the house for the horse and cow, etc., etc. All of these should have an expression of purpose, and an air of taste, helping to give importance to the place, rather than, as is too frequently the case, being



A SUMMER HOUSE.

ugly excrescences, spoiling all the good effect of a well-designed dwelling and neatly laid-out grounds.

In style these out-buildings should correspond with the dwelling-house to which they belong, though cheaper in construction and simpler in detail. If the style of the house be Gothic, or any of its modifications, then the out-buildings should be Gothic in a milder form, as the simple rustic battened style. And if the dwelling be Italian, they should partake of that style, with the flatter roof, the more prominent cornice, and the general prevalence of horizontal lines which characterize it.

More than any thing else we need a *wood-shed*. This, which might also contain

the privy, should be but a short distance from the house, an unpretending structure, built of wood and battened, with low eaves, and a broad hood over the door, and vines covering its sides, and flowers growing around it. Or it might be connected with the house by a covered trellis, on which should be trained flowering and fruit-bearing vines, forming thus a pleasant passage, sheltered by green leaves and fragrant with sweet-smelling flowers, or rich with clusters of purple and white grapes.

Then, too, it is very convenient, in fact, is necessary to have ice in the summer-time, to preserve our edibles and our drinkables, and to afford a cooling draught, which is exceedingly grateful on a hot day; and, as there is no *ice-man* here to leave a cake every morning at our door-step, we will have a supply of our own. So, away in some sheltered corner of our lot, not too far from the house, by-the-way, where there is a thick clump of trees, whose dense foliage the sun can not penetrate with his burning rays, we will choose a spot for the location of our *ice-house*.

This should be about twelve feet square, and eight or nine high to the plates, built with double walls, filled in with damp tan, or charcoal, or saw-dust; with double doors fitting tightly, the inner one in two parts, with separate hinges and hasps; a broadly-spreading roof, with a ventilator at the apex; and a thorough provision for the drainage of water underneath.

Then, when winter has come, we will make a half dozen trips with the horse and sled to a neighboring pond, and, provided the ice be at least seven inches thick and clear as crystal, we will fill our house with the coming summer's supply; placing first upon the floor a heavy layer of saw-dust, or tan, or straw, then the ice, and finally another layer of straw over the whole, to keep out the air as effectually as possible, then shut all the doors and "let it sweat;" and when summer has come, and the water grows tepid, and the butter commences to soften on the table, and the meat to spoil, we have an ally here that will prevent any further mischief of the kind, bidding defiance to the hottest sun.

Then comes the *dairy*. This, too, like the *ice-house*, should be in some cool, sheltered spot, handy to the house; and more ornament will be allowable here than in the other out-buildings. We have seen one built of stone, octagonal in form, with a steep roof rising like a tower in the air, and surmounted by an ornamental vane; the interior floored with encaustic tiles; the shelves of marble; the ceiling ornamented with fresco; a fountain spouting water from the mouth of a swan into a marble basin, and other like *fancy work*. But unless a person has a very expensive house, with gardens, and parks, and out-buildings to correspond, this is not the dairy for him. A small, well-ventilated building, with broad eaves; a cellar under it, thoroughly drained; shelves around the sides for setting the pans; a broad table in the centre, with a cupboard underneath; conveniences for working, and churning, and packing, constitute all the requirements of a family dairy; and these are within the reach of almost any one—the *fancy work* being better somewhere else.

As good a plan for a dairy as we have seen was published some time since in the *Country Gentleman*. It consisted of a room ten feet by sixteen, situated directly over a cold cellar, with provision for ventilation above and below, and surrounded on three of its sides (though we would surround all four sides) with a ventilated space of a foot or two in width, by which means an equal temperature is preserved at all times.

This room was entered by two doors, the one solid and the other a frame covered with lattice or wire-gauze to admit cool air when necessary. The

shelves were narrow strips of inch board, set on edge in notches cut in the upright boards which support them, with a space left out for a window. The peculiarity which we wish to recommend, however, consists in having the separate air-chamber surrounding the room, which we consider the best means we have ever seen adopted for preserving an equal temperature throughout, all the time. Thus much for the dairy.

Then the fowls and pigs should receive their full share of attention, for they are very important and very useful members of the country family ; in fact, it would be akin to impossible for us to get along without the fresh new-laid eggs every day for the table, and in due season the tender bodies of the one, and the delicate spare-ribs, the rich brown hams, and the crisp white rashers of the other, to say nothing of their highly artistic and truly domestic performances in the musical line, which greet our ears at stated periods—the homely, self-satisfied grunt of the latter, and the cheerful, promising cut-cut-cut-a-cut of the former. And in order that they may be good producers, and finally yield themselves up as sacrifices in good condition for the table, care should be taken that they have ample and comfortable accommodations.

A building twelve feet by eighteen, facing the south, divided into two separate apartments, having each a separate yard attached, the one looking toward the southeast and the other toward the southwest, will give sufficient room for two or three pigs and two or three dozen fowls ; and these will be as many as any ordinary family will need, unless the owner raises eggs and pork for market, in which case it will be necessary to have a separate establishment for each, with separate rooms and yards on a more liberal scale. But whether the stock be large or whether it be small, and whatever be the accommodations, a perfect *cleanliness* should always be preserved, as indispensable to the successful raising of either fowls or swine. The former, we all know, are neat in their habits, and the latter, although they are not over fastidious in their taste, are by no means, naturally, the filthy animals they have the reputation of being ; and it is only by neglect that they are found wallowing in the mire and covering themselves and their pen with dirt. It is now conceded, on all hands, that with a proper care they may be kept as clean and neat as cows or horses, or any other animals. Supposing neither of the above was ever curried or brushed, and their stable was never swept out ; we ask, how much better than the hogs would they appear in a month's time ? And, on the other hand, supposing the latter were curried every day, and their pen thoroughly cleaned every morning and evening, would they not in a little while compare favorably with the others ?

We hope before long to see the time when the name of hog will no more be associated with filth than it has been heretofore with tidiness ; and when this time does come, we shall see the *millennium* of pork raising.

"But," say you, "what has all this talk to do with the summer-house you have placed at the head of your article ?" Sure enough, what has it ? We will therefore close this rambling "mere mention" of topics, to which many pages might be profitably devoted, hoping at some future time to resume the subject, and enter more fully into the detail of the matter, with plans and designs to illustrate.

We present with this a design for a summer-house, of the simple Gothic style. It is to be constructed of rough joists and rough boards, with sides of lattice, and roof covered with shingles, and measures ten by twelve feet, with eight feet posts. It is simple and easy of construction and moderate in cost.

THE YELLOWS IN PEACH-TREES.

BY WILLIAM REID, ELIZABETH, N. J.

HAVING read in the *Country Gentleman*, page 46, Jan. 17th, a report of the discussions of the Fruit-Growers' Society of Western New York, held at Rochester, January 9th, I find, in article 3, "The Yellows in Peach-trees."

My belief is, that no tree contains any contagious disease within itself, or can contaminate or give a disease to another tree. I also believe that all the diseases that trees have are brought on by local causes. Take away those causes, and trees will be healthy.

Let us look over the various remarks made by our western friends, when in session at Rochester.

First : H. N. Langworthy says a diseased tree of his, having what he supposed to be yellows, produced fruit a month earlier than a healthy one, and put out a number of small shoots with yellow, sickly leaves. Now, I would ask any person that has had any experience in peach-growing, if this is not always the case when a tree dies. It invariably puts out these small, imperfect shoots, with yellow, sickly foliage. This is what people call yellows. I would like to know what other disease trees die of, or if there is any other way. If so, I would like to know what the appearances are. All peach-trees die; some sooner, some later, according to the varieties. Eight to ten years are now as long as we can get peach-trees to live here. They have never lived much longer than this for the last forty years; and occasionally, when we have very severe winters, they do not live as long. But they invariably die off in the same way, with small, yellow, sickly foliage. They did so forty years ago; how much before that period I would not undertake to say. Now, if this is true, what our modern horticulturists call yellows has always existed. I can only vouch for it being so for the last forty years; but I have no reason to doubt it has been so ever since peach-trees have been cultivated.

Again: we often hear the remark made that peach-trees don't live as long now as they did formerly. This may be the case occasionally, but not always. Fresh, virgin soil, favorable winters for a number of years, and the fact that many of the orchards then were natural trees, will account in a great measure for the difference that may sometimes have taken place. But sooner or later these trees all died, and died exactly as they do now, by sending out these small shoots with yellow, sickly leaves; so that nothing unusual, after all, can be made out from H. N. L.'s remarks, except his having budded a peach-tree from a diseased one, and it killed the tree. This may be so in the West; but I believe it has never taken place here. Our trees do not seem to be quite so sensitive.

Dr. Sylvester says that the disease was so bad in New Jersey that they could only get two or three crops; which, after all, is not so bad as it might be. We think that peach-orchards pay well when we get three crops. How many does the doctor get, or expect to get, from his orchard? C. L. Hoag, again, says a gentleman of his acquaintance lost a whole orchard by introducing a diseased tree from the East. He does not say from what part of the East it came; probably, with more modesty than some of his neighbors, he refrained from saying where, but no doubt he meant the Jerseys. People in the Jerseys can not be too careful in introducing peach-trees of foreign growth, lest they should prove as disastrous as the one Mr. Hoag's friend received from the East. After Mr. Hoag we have Mr. Downing's testimony. He says a man in his neighborhood had a tree which

was affected, and from this tree the disease has spread all over the neighborhood. Mr. Downing, in a remark to Mr. Hooker, says, again, that the disease does not exist in the South, and that trees sent from the North get healthy again. If this is so, this supposed disease is not as fatal as it has been represented to be by some people; losing its contagious properties when removed to a warmer climate. Perhaps Mr. Downing is not aware that peach-trees die off in the South in the very same way they do in the North—by ripening their fruit prematurely, and sending out the same weak, sickly shoots that they do in the North. Now I can vouch for this being true, (not hearsay,) having travelled through nearly all the Southern States within the last few years. I have also lived in several of them for short periods, a number of years ago, giving me ample opportunities of observing the Peach-tree. I have also travelled through and had opportunities of observing the growth of the Peach-trees in nearly all of the Northern States. As I have observed, I had frequently heard of old orchards of Peach-trees living to be as large as Apple-trees. Now such things might have existed in the early settlement of the country, when the soil was fresh and newly broken up for the first time; for I believe this to have been the cause. Many of the orchards, also, at that time were natural trees, which are always more vigorous and hardy than those varieties so long under cultivation by budding. From these causes, in a great measure, the old orchards spoken of may be accounted for. But very few of these old trees are now to be seen, even around Rochester, which are any larger or better looking than many of our own orchards in the Jerseys. I have been told (but this I can not vouch for) that these same orchards are nearly all planted, with few exceptions, with trees which came from the Jerseys. Further west and south, I am not able to say where the trees came from; but, from appearance, they do not seem to be very old—from eight to ten years.

Having digressed a little from the remarks that I commenced with, I will return to what Mr. Sharp says. He undertakes to inform the people, and warns them against some itinerant peddler, (he does not say whether he comes from the Jerseys or is one of his own peddlers,) having brought into the neighborhood of Rochester a large quantity of trees from the Jerseys, and is now selling them to plant orchards with. I have no knowledge of any nurseryman, in this part of the Jerseys, engaged in such a business; but I have no reason to doubt its truth, for we have many such travelling here, selling trees, with pictures, credentials, and vouchers enough for one of our foreign ministers, going to represent us at the Court of St. James, who will agree to furnish every thing in the way of trees, from a Lawton Blackberry to a fine Beurre Pear; and many of these same men tell us they come from your neighborhood. Now I do not say that it would be proper to use harsh means, or to commit any breach of the law, to get rid of these men, who have the assurance to go in among you with such trees; yet I certainly would make an effort to get rid of all such, even if I had, as a last resort, to make use of gentle means, as a warning to others who might be inclined to do the same. We will now leave Mr. Sharp to make use of our advice to the extent he may think proper.

Let us now turn to H. E. Hooker's remarks. He says he has seen orchards planted with trees from the Jerseys which did very well. Again, he says he has seen orchards planted from the same source that soon died, but did not infect other orchards. He also says, in another place, that diseased trees sent South became healthy. Leaving Mr. Hooker, we now come to the remarks made by P. Barry, of the firm of Ellwanger & Barry. Let us see what friend Barry has to say about this vexed question. He says—what is perhaps nearer the truth than

any thing yet said on the subject—that he does not think the disease contagious, and believes the cure for yellows to be a good fertile soil, and the cause of it a very poor soil; a very sensible remark, and coincides with our own views. Now if these remarks of Mr. Barry are true, (and I see no good reason to dispute them,) the disease called yellows by some people is no disease at all, but what is brought on by a poor soil; and it can be brought on at pleasure by using this means, viz., a poor, hungry soil. He then says, further, that he has had trees from a region badly affected—he does not say from what region, but from other remarks he evidently means some part of the Jerseys; for nearly all the good trees, as well as the bad, come from there—which became healthy when planted on good ground. What does he call badly affected? He says, previously, that the cause was poor soil, and a good soil the cure. From this we are led to infer that the trees he had received were from some poor soil, which goes to confirm what he already says, that the disease is no disease at all, and only such as any person with his eyes open, and with any knowledge of trees, would at once see and reject as poor trees, and avoid buying them. Mr. Barry, however, before leaving the subject, makes some further remarks, which are not so easily explained. I refer to the remark previously made, that he had a lot of trees badly affected, which, when planted on good ground, became healthy. Notice this remark. These trees, no doubt, were year-old trees; at least we may suppose that Mr. Barry would not be likely to plant them older. Then he follows on again, in another remark, and thinks the Peach-tree does not have the "yellows" in New Jersey until three or four years old. The remarks last made are rather contradictory, as he says he planted an orchard with trees which were badly affected, and which we have every reason to suppose were one year old; so that either the first or last remark must be wrong; for he distinctly says that trees do not get sickly until three or four years old. Mr. Barry then leaves us with strong advice not to purchase any trees from the Jerseys; or, in other words, would advise none to plant Peach-trees that had the appearance of being grown in poor soil. The next and last speaker is F. W. Lay. What does he say? He says this: "Had known many orchards planted with Jersey trees; did not know of a single tree diseased in the whole orchard." Rather contradictory from previous remarks! Not having the pleasure of being acquainted with Mr. Lay, he may be a nurseryman, for aught I know to the contrary; but we have no reason to believe but that he speaks the truth.

This was the termination of the several discussions held by our Rochester friends on the disease called yellows.

Now what does it all amount to, when we come to go over all the testimony and analyze it? It seems to conflict in some things; yet, from all the evidence before us, I see nothing that makes the disease new, or any thing like contagious, except what a poor soil will effect, which every person who is familiar with the growth of the Peach can readily understand; and that all those so-called diseases proceed from bad soil and poor cultivation. I can not help believing, however, that many of the remarks which I allude to, and which were made by different individuals against trees raised in this state, were personal, and altogether uncalled for. Nor can I help thinking the whole of the discussion, or nearly so, was for the sole purpose of putting down the sale of trees grown here, and in favor of those grown in the neighborhood of Rochester. As far as I am personally concerned, I care not what others say about trees, believing that people here are perfectly competent to judge of the quality of trees without the assistance of any of our Western friends. I would also say, and I say it without hesitation, that more good trees are now grown and sent every year from the state of New Jersey than

all the other states in the Union. I do not pretend to say, however, that this is by any very superior knowledge or art, for almost every one can grow Peach-trees; but from the favorable locality of the state, and the mild winters that generally prevail, and being altogether free from those great changes in the temperature which the West is subject to, and which will always be a drawback to the cultivation of the Peach successfully, as well as many other kinds of trees.

I would, while speaking of the quality of trees grown in different sections of the country, the defects of which our friends in the West have been so diligent in pointing out, call the attention of parties who are about planting Apple-orchards, which are likely to be of far greater importance to the country at large than the Peach-tree, which people are perfectly able to judge of by appearance, to some defects not so easily detected in the apple. I allude to the millions of Apple-trees that the country is now being flooded with, and distributed in every corner of the land by persons calling themselves tree agents or peddlers, who come from all parts of Western New York. I allude to those trees that are known by the name of root-grafted trees. They are, to be sure, what they term them, root-grafted; but the root, if root it may be called, is a mighty small root, or piece of a root, being only a piece about two inches in length. A more proper name would be to call them cuttings, for they are nothing more nor less than Apple-trees grown from cuttings, the small piece of root only keeping the graft alive until the cutting begins to grow, which makes new roots of itself. The consequence will be, after a few years, or when they begin to bear, that a great proportion of them will blow down with the wind. Being only cuttings, they are deficient in the strong roots which Apple-trees have that are budded or grafted on the seedling stock above ground, and which are so necessary to make strong, lasting, and permanent trees. And I would advise every person who is about planting out permanent orchards, to have nothing to do with any Apple-tree that is not grafted from six inches to a foot above the ground. They are not only likely to be much harder, but have roots to sustain them when they come into bearing and are of a large size. This is one reason why so many trees, now to be seen in the West, that have been planted with these root-cuttings, are dying out in winter. Not only have they this objection, but they are also nearly all more or less lunched over from the effect of the winds; and whoever plants them will be disappointed, sooner or later. Most of the tree peddlers that travel through the country, on account of cheapness, and from the short, bushy roots being more portable than Apple-trees that are grafted above the ground, carry this kind of tree with them. It is certainly not necessary now, if it ever was, to buy trees of traveling agents who have no fixed place of residence, or responsibility, and who generally are ignorant men, scarcely knowing the name of one tree from another, except what the circulars and other credentials they carry give them, which they generally have in abundance. I would again advise every person to go to a responsible nurseryman—and there are plenty of such—who will send them trees correct to name, who have their character and reputation at stake, and who are generally more competent to judge as to what varieties are best adapted to the locality the purchaser lives in. Not only this, but they can generally purchase all kinds of trees cheaper and better than from such agents. I have often been astonished to meet with shrewd business-men, whom you would think would in a moment be able to decide on any thing, and generally come to correct conclusions, who, when they go into the country to plant trees, seem to know nothing at all about this business; and well these agents know that these are the men to begin with, by first showing them their bundle of pictures containing exaggerated paintings of all kinds of fruits and flowers, which they very likely know very little about, having, perhaps,

never seen them, and know them only by the paintings they carry around with them. I am satisfied that more loss and disappointment have been caused to purchasers by peddlers sending small, worthless trees through the country, than would have sufficed to plant the whole Western States. In place of this, they now have to begin and replant all the grounds planted from 1850 to 1855. I refer now to small, worthless Pear-trees as well as Apple-trees, many of them only a year old, and not more than two or three feet high, which was the usual size sent out at that time. The consequence is, they have all, or nearly all, been frozen out by the severe winters, and scarcely a vestige of them is now to be seen. But people have learned wisdom, if it has cost pretty dear. They are now raising their own trees and planting them of a suitable size, and will in the end, no doubt, although it may have cost something, have the pleasure of raising their own fruits as well as their own trees.

[What can our Western friends have been doing to rouse the quiet and taciturn William Reid? We have never known him to fire such a big gun before. We would add a few words on the "yellows," but the article is already very long, and we let them pass for the present.—ED.]

A SELECT LIST OF GLADIOLI.

BY THE EDITOR.

AMONG garden bulbs, the Gladiolus is perhaps one of the most popular, or at least is in a fair way of becoming so. The introduction of Gandavensis, a few years since, gave a new impetus to their cultivation, and in the hands of the French they have been made to take their place among the gayest flowers of the garden. Not their least recommendation is the easy manner in which they may be grown, any common garden soil suiting them well; though, in common with all other plants, they make a grateful return for any labor bestowed upon them. A very rich soil is not the best for them, as it is apt to make their colors run. Old manure from a hot-bed, with some vegetable mould, thoroughly incorporated with the soil, is about as good as any thing that can be used; the manure, however, should be used sparingly. They may be planted singly, or two or three together, and provided with a stake. The crown or top of the bulb should be about two inches beneath the surface. In the fall the bulbs are to be taken up, and stored in a green-house or cellar, free from frost. But we only design to give a list. We examined last season upwards of a hundred varieties at Mr. Bridgeman's, at Astoria; and, in order to help our readers to make a good selection of those already known, we append a list of twenty-four which we marked *best*. Some of the new kinds, of which we have just received a fine collection from Messrs. Thorburn, may prove to be even better than those named; there are others also nearly or quite as good as those in our list, and these should not be forgotten. The improvement is still going on, and the best we now have may soon be surpassed. The following, however, can not fail to give satisfaction.

Madame Haquin, blush, heavily flaked with lilac purple; lower petals shaded yellow, and marked with rosy purple.

Madame Pauline, blush white, sometimes heavily flaked with rose; heavy crimson purple, feathered blotch on all but lower petals.

Madame Paillet, rosy pink, slightly flaked with scarlet; dull purple blotch on lower petals, and frosted.

Madame de Vatry, pure white; lower petals shaded yellow, and feathered with crimson.

Danaë, snowy white, delicately flaked with deep rose; lower petals tinged with reddish buff.

Clemence, blush pink, heavily flaked with cherry scarlet; lower petals shaded, and marked with crimson maroon.

Compt de Morny, deep rose, flaked with maroon; lower petals white, shaded with crimson.

Don Juan, deep rose and dark scarlet, mottled and flaked; lower petals shaded golden yellow, with single stripe of maroon through the centre.

Duc de Malakoff, rose, flaked with scarlet maroon; lower petals shaded white and yellow, and marked with crimson maroon.

Eugene Verdier, white, flaked with rosy violet; lower petals blotched with rose and marked with carmine.

Imperatrice, blush white, delicately flaked with rose; lower petals feathered with crimson; good form.

Vulcain, deep fiery scarlet, richly shaded; the darkest of all.

Victor Verdier, rich fiery scarlet, with heavy shade of black maroon on lower petals; good form.

Madame Truffaut, pink, flaked with cherry; heavy dark maroon blotch on lower petals; large.

Adonis, salmon pink, shaded with crimson lake; lower petals tinged buff, and distinctly feathered with crimson.

Berthe Rabourdin, pure white ground, slightly flaked with rose; heavy blotch of crimson on lower petals.

Mars, vivid scarlet; lower petals shaded pale yellow, and heavily feathered with ruby maroon.

Mathilde de Landevoisin, blush white; lower petals distinctly feathered with purple maroon; fine form.

Napoleon III., brilliant scarlet; lower petals pale yellow, marked with maroon.

Ophir, buff yellow, flaked with rosy crimson; lower petals shaded bright yellow, and feathered with chocolate brown.

Oracle, rich rose, tinged with violet, and delicately flaked with scarlet; lower petals shaded yellow, and marked with purple.

Othello, very brilliant scarlet vermillion; lower throat clear yellow, feathered with deep crimson.

Penelope, blush pink, sometimes flaked with cherry scarlet; lower petals shaded yellow, and marked with maroon; very large.

Premices de Mont Rouge, rich rose and fiery scarlet, handsomely shaded; fine form.

NATURAL GRAPE ARBORS.

BY W., WASHINGTON HEIGHTS, N. Y.

MR. EDITOR:—The annual grape-pruning season has brought to my mind a subject upon which I have been cogitating for some five or six years past; but before proceeding further, I may as well—for fear of subjecting myself to the charge of

plagiarism, or, in plainer English, "stealing other folk's thunder"—remark that some one else, some time ago, either in this magazine or the *Gardener's Monthly*, alluded to the same subject. Without much trouble I could, I presume, find out what was said and where it *was* said, but I do not desire to do so. I would rather simply record my own observations and impressions.

In pruning grape-vines on arbors or trellises, I have INvariably observed that whenever the young growing shoots come in contact with any tree within their reach, they will take hold of the branches and grow away, till they attain double the length of any of the others that are growing exposed on the arbor; and not only longer, but make stouter and firmer wood.

Now let these stray shoots remain undisturbed and unpruned for a year, or two years, and the result will be not only a better quality of fruit, but at least DOUBLE THE QUANTITY of it, compared with those on the arbor.

Now the question naturally arises, Why is this? It is very certain that this difference does not result from manuring the roots or pruning the branches. In fact, as far as the roots are concerned, they are laboring under great disadvantages: being, of course, in close proximity to the tree on which they climb, they are, consequently, robbed of at least a moiety of their sustenance.

The only satisfactory conclusion I can arrive at about the matter is this, that the shoots of those vines in the tree find there a grateful, genial, humid atmosphere, in which they love to luxuriate—HUMID compared with the ARID atmosphere that surrounds their neighbors on the exposed trellis; they have also a more uniform temperature, as well as the SHADE in which they so much delight, and which I think is so very ESSENTIAL to the well-being of most, if not ALL, the native vines.

Three years ago, in pruning the vines on a small arbor, about thirty feet long, having four vines on each side, I observed that two shoots of the preceding summer's growth had run into an apple-tree which grew very near one end of the arbor. I had my hand on one of these truant shoots to pull it out of the tree (as it was very fine wood) and place it on the arbor with the others, but I suddenly changed my mind, and thought I would leave it where it was, to pursue its erratic course, in company with the other delinquent shoot.

The bunches were not counted nor the fruit weighed, to my knowledge; but my belief is, that from those two stray shoots, in that old apple-tree, there was nearly double the quantity of fruit that there was on all the other vines on the arbor put together, notwithstanding the manuring they received, and the pruning, as I thought, "according to scientific principles."

Now the above is not an isolated or exceptional case, BUT THE RULE, wherever and whenever they come within reach of a tree. A knowledge of these facts convinces me that pleasing and profitable results may be obtained from this well-known predilection of the vine for shade, by planting them adjacent to trees, where circumstances will admit, and there leaving them, unmolested, to indulge their freaks and whims.

For some time past, (excepting last season,) the Isabella and Catawba grape crop has been almost a failure in many localities, rotting and shanking off before they were ripe. I feel confident that by planting a few vines here and there, where they will have a chance to run into the trees and take care of themselves, in this way, without any further trouble, (except picking,) scores of bunches of good, sound fruit will be obtained, when those on arbors, stakes, and trellises are a comparative failure.

For the sake of illustration, I will give a sketch of one way in which I think I would plant a dozen vines, for a start, if I had the opportunity to do so. I would

look around the ground for a good-sized tree. I would prefer an apple-tree, if it was in the right place, as they do not grow so high, and would give a larger, broader surface for the purpose than most other trees. I would measure out from the trunk of the tree twelve or thirteen feet, more or less, and draw a circle around the tree at that distance from it. On the line described, six feet apart, I would put in stout cedar or chestnut undressed posts, eight feet high, (above ground,) and fill in with panel-work of the same rough material, (rustic summer-house fashion,) and then plant a vine to each post. On the top of each post, if necessary, a pole may be nailed, slanting into the tree, and secured to some of the stouter limbs, for a rafter, till the vines had firm hold of the branches.

Inside this now pomological summer-house (twenty-four feet in diameter) permanent seats may be fixed ; and also a table around the tree, or a short winding stairway may be made for convenience in picking the fruit. I must not forget to mention that it will be necessary to leave a space open between two of the posts, or two or four openings may be left, and a walk, or walks, leading to them. And now, Mr. Editor, don't you, with your mental visual organs, perceive what a glorious summer-house I have (in imagination) erected for the children ? Take my word for it, sir, to this temple will they daily repair, and worship at the shrine of Pomona. Well, what if they do occasionally gorge themselves with apples and grapes ? Bless you, sir, ripe grapes won't hurt children ; no, nor the "big uns" either. How do I know ? I will tell you how I know. About four years ago I suddenly and agreeably came in come-at-able contact with four or five as fine bunches of Muscats and Hamburgs as were ever unpacked and tasted in any HORTICULTURIST's (horticultural, I mean)—editor's sanctum sanctorum. How many pounds I ate I can not precisely tell, but let it suffice to say that I WAS FULL, not in a figurative sense, but in reality. I felt—I think I felt—something as I suppose a boa-constrictor must feel after having swallowed an antelope, horns and all. Well, I made up my mind that if I did not die that night, I should not require any thing to eat for the next two days at least ; but, to my utter amazement, I never felt better in my life than I did that very next morning, and never in better condition to perform, if required, a *gastronomical* feat. Now, sir, this is how I know that RIPE GRAPES WON'T HURT CHILDREN. Therefore, let them go to this play-house that I have erected for them as often as they like, and play, and rollick, and romp, climb the tree, and eat apples and grapes to their hearts' content, WHEN THEY ARE RIPE ; and, likely enough, when the family physician presents his bill, papa will find that he has saved enough on that to pay for the labor and material used and expended in the erection of my " Natural Grape Arbor."

[A right good finish, W. You have shown so much taste and such great capacity for Muscats and Hamburgs, and, withal, have been so considerate for the children, that we have no disposition to criticise any thing you have said. By all means let the little ones eat *ripe* fruit freely and abundantly ; nothing could be better for them. But let us look a moment at the point you started with. It is an undeniable fact that vines will run on trees precisely as you describe ; but we regard your example as an unhappy one from which to draw principles of *practice*. Vines, as generally grown on arbors, are submitted to a killing process, which few of them survive for many years, and which produces unfruitfulness and constitutional weakness at a period when they ought to be showing all the vigor of youth. Under these circumstances it reaches forth one of its arms to a neighboring tree, and, under the operation of the "first law of nature," runs for its life ; and not only so, but carries with it a large portion of the sap which would otherwise go

to sustain the whole vine ; hence the other portions become starved and enfeebled, and the fruit small and poor. We do not think it safe to generalize facts under such circumstances. Take a well-grown vine on a trellis, (not an arbor,) and one growing at random on a tree, and we have no doubt of the result. • We think, however, that as good grapes may be grown on a tree as are often found on arbors, such as we find them ; and they are poor enough, lacking in every good quality except sweetness, and not always possessing that. Do you mean to say, W., that *our* vines love shade, or that grapes will ripen as well in the shade as in the sun ? Of course you do not ; you only wanted us to keep a little shady while you made that pretty "Pomological Summer-House." We see now what you were after. It was a pretty conceit, and handsomely done. We like the idea, and hope many such houses will be made for the children to play in. They will make a pretty feature on the lawn, afford a grateful shade, and some tolerable grapes, but not many apples, for the vine will certainly kill the tree in time, for which you have not provided ; but the arbor will remain, and that is all you probably want. We "go in" for Pomological Summer-Houses, but without the expectation of getting the best fruit from them.—Ed.]

THE BERGEN PEAR.

(See *Frontispiece.*)

BY THE EDITOR.

OUR Frontispiece for the present month is the *Bergen* Pear, a native of Long Island, a much-abused place, but which, nevertheless, has given to the world its best apple, and a fair proportion of the best fruits in cultivation. The Bergen Pear was found growing in a hedge on a farm at Bay Ridge, owned at the time by Simon Bergen, from whom it took its name. The tree is still standing, and is about fifty years of age. It is naturally of a good form, and comes early into bearing ; it may be called uniformly and fairly productive. The young wood is reddish, sprinkled with white dots. Though not of the best quality, it is a valuable market fruit, usually selling at the same price as the Bartlett. It is a recommendation for any pear for market purposes that it resembles the Bartlett ; the people know that, and conclude, not very logically of course, that any pear that looks like it must be like it. The Bergen, when carefully ripened, is nearly of "best" quality. It is a peculiarity of this pear, that in many specimens the core and seeds are absent. Our specimen is of the average size, and was taken from a basket prepared for market ; some of the specimens were nearly double this size. The fruit on the outside of the tree becomes highly colored ; the cheek in this specimen is not clearly shown, on account of the lithographic ink "striking through," as the printers say, making it look dark and dull. The season of the Bergen is from October to November. It was first brought to notice by John G. Bergen, Esq. We have gone somewhat into detail, because we think that the history of a fruit, when it is clearly known, ought to be put upon record.

The following is our description : *Size*, large. *Form*, pyriform to pyramidal. *Color*, glossy lemon yellow, shaded with crimson and fawn, and sprinkled with crimson and red dots. *Flesh*, whitish yellow, a little coarse, slightly gritty, melting, juicy, and sweet, with an agreeable aromatic flavor. *Stalk*, stout, of medium length, curved, with a fleshy ring at the base. *Calyx*, small, open, with

stiff segments, in a small, very shallow basin. Core, very small, and, with the seeds, sometimes absent. Quality, "very good." Season, from October to November.

RURAL SOCIETIES, NO. 2, AND CONCLUSION.

BY R. ROBINSON SCOTT, PHILADELPHIA.

THE emergency having passed away that induced me to reenter the pages of the HORTICULTURIST as a contributor, having for several years denied myself the pleasure of being found there, I have no longer any apology for occupying a place among its correspondents. Your remarks appended to my notice of Rural Societies warn me from the purpose that I had contemplated, since you advise me that he who would unfold the causes of the low position of these societies in general must be a *judge*, and not a *lawyer*. Poor as a lawyer, I must make a still less efficient judge, and prudence admonishes me to allow Societies Nos. 5, 6, 7, 8, 9, 10, and all the others whose positions are yet undefined, to rest in peace. Of No. 5, your neighbor across the river, I should have wished to speak, as it commends itself to the lovers of horticulture, not only for the energy of its first officer, but for the results it has achieved.

I find, however, that, obnoxious as my style has proved to many of the former readers and writers in the HORTICULTURIST, I am equally obnoxious to parties nearer home, who have for years helped to pull the wires of several of these Societies; and I am even now charged with advocating all manner of "extreme ideas" and "impracticabilities"—with arriving at "hard-shell" conclusions, etc., etc. You will excuse me for the present if I decline being elevated to the *judicial* bench to try this case, preferring to leave it in your and your readers' hands. Permit me, however, to correct the amount of vested property held by Society No. 2. It is now \$11,000, instead of \$13,000, as last reported. Several other slight differences in amount of property may be noted, but the statements are very nearly correct. You will readily remember the period in the history of No. 3 when we were obliged to permit a great showman to humbug us into holding its annual exhibition at a Broadway museum. Has it never recovered that shock? will it never recover?

[We were rather pleased that somebody had undertaken the task of analyzing the causes which have operated in many instances to impair the usefulness of our Rural Societies. It was something that we had proposed to do, and felt relieved that somebody else had undertaken it. Our idea was, to analyze the principles upon which these Societies were conducted, to ascertain, if possible, wherein they had failed, and to suggest such modifications as might be called for; but to be very careful not to pull down unless we had something better to uprear. This would make it incumbent to look at all sides of the subject, much as a judge looks at a case from the bench, and not as a lawyer, who advocates only one side and without mercy to the other. This is what we meant by our *judicial* allusion. Are we not right? We do not fear investigation, and Mr. Scott we know is not afraid to make it; but perhaps the subject had better drop for the present. That museum show was undoubtedly an unfortunate affair, and damaged the Society, but it afterward saw some palmy days. The immediate causes of its failure you will know hereafter.—Ed.]

THE SPAN-WORM.

BY DR. I. P. TRIMBLE, NEWARK, N. J.

You have but few singing-birds in cities, and for that reason caterpillars become very troublesome, and, unless checked by some Ichneumon, or parasite insect, go on increasing rapidly until famine does its work.

I have known some kinds of caterpillars in such numbers upon trees as to consume the foliage before they were fully grown, and in their attempts to reach other trees to be entirely at a loss as soon as they reached the ground—their instinct, so surprising on other occasions, now entirely at fault. Their helplessness on the pavement was pitiable, and they soon perished.

In this city (New York) you have a caterpillar of this class, the little span-worm, or Geometer. It is unnecessary to describe its personal appearance. This little worm, like many others, is something of a philosopher; it knows that if the wind should throw it from a high tree, and it had no means of breaking the force of the fall, it would be hurt. Now, to guard against any thing so unpleasant, it lays along its path, wherever it goes, a silken cable; push it overboard any where, and it will lower itself down deliberately and safely. It has also a kind of hand-over-hand way of climbing back again by the same cord. You may have noticed, also, that, when descending, they drop themselves a little way at a time, and then stop. These silken threads are spun from a fluid, and require some time to dry, otherwise they would not bear the strain.

Some of us in the rural districts of Jersey read the papers. Once last summer I noticed that the authorities were about to cut down the trees of this city to get clear of the worms. Now, nothing in your newspapers perplexes us so much to understand as the accounts of your local government. At one time your aldermen are called the "forty thieves;" then they appear to have nothing to do but to seek out the nativity of a fat policeman; and lately they seem to have been mixed up with the Japanese ambassadors in some very queer operations; but when your city governors *do* order your shade-trees cut down to get rid of the little caterpillars, we shall know exactly what manner of men aldermen are; then we, who pay some attention to classifying the orders of nature, will know precisely where to place them.

These little Geometers of your city, like most other caterpillars, feed upon leaves; they can not live without them. They are born in the trees; leaves are plenty, they are all around them every where, and they feel no kind of hesitation about taking all they want. And why should they? Their mothers selected these trees for them the year before; and this selection is the result of an instinct the most wonderful of the world of wonders in which we live. She selects from the many those few trees to deposit her eggs upon whose leaves will put forth the next spring just at the right time to afford food for her little ones when they come out of the eggs. In other words, she knows how much caloric is required to burst the buds of trees and the shells of her eggs, and she puts *always* the right eggs on the right trees.

If you will now search the bodies of certain kinds of trees in your city, you will find thousands of clusters of little eggs. Examine the elms, just under the large branches, where they go off from the main trunks, and in some places you may see the bark almost covered with them; if you let these eggs alone, you will find, in midsummer, when you want the shade, these trees will be almost as leafless as they are now, and the span-worms will be every where acting out Mohammed's coffin.

Man was created with dominion; but, if he does not choose to exert it, he should

not blame the little insects. Had I a favorite shade-tree coated over with these eggs, I would, within a month of this time, do something to prevent those eggs from becoming caterpillars. To tap each cluster with a hammer would do it—to take them off with a gouge or small adze, or to daub each cluster with paint, or varnish, or tar, would probably save the foliage of that beautiful tree. But nothing of this kind will be done here; and I shall have the opportunity next summer of seeing lots of these span-worms, and shall come on purpose.

The insectivorous birds in the country attend to the caterpillar business for us; but these birds will not stay with you. They do not like the noise, the smoke, and especially the boys of the cities.

These little span-worms, next summer, when they have eaten all the leaves they want, will choose others to make their houses of; for they belong to a large class called leaf-curlers; and this leaf-curling process, with some of them, is a very strange one. One much less than your span-worm, that lives on the plum-trees, and wraps a leaf around it, so as to resemble a well-formed cigar, I have watched throughout the process with surpassing interest. I have seen this little speck of a worm take a calm survey of a leaf, then fix her cord on one side, then cross over, and then again and again, and then at different angles; and when some twelve or fifteen of these cords were arranged, she would go backwards to some distance, and with a single cord act upon all these other cords, as if by a combination of leverage, operating with a power utterly above and beyond any thing so minute a creature could accomplish unaided by such a combination of mechanical forces; and this will be repeated again and again, gaining a little every time, till the whole is completed. Sometimes her strength or her cordage is unequal to the work; then she will cut away the obstructing part, and try again. In a few hours the leaf will be curled; the overlapping parts will be neatly sewed together; the inside will be lined with silk, composed, in a great measure, of the cordage she had used as an engineer. In a few days her limbs will have fallen off, and she will have assumed the pupa or chrysalis state, and appear dead; and in a few more days she will be a butterfly that flies at night—one that your lamp-light “leads to bewilder.”

Once last summer, in crossing from Jersey to this city, a lady came on board the boat, with one of these little Geometers on her bonnet. The little thing seemed busy in measuring that bonnet; but it did not take long, and then it quietly perched itself upon the highest point. It was what is called a “love of a bonnet”—very beautiful, but very small; the lady herself was very beautiful also, but very large—a perfect Juno in her style, and most elaborately clothed in silks. She cast a hasty glance at her fellow-passengers; but the silk-worms had done much more for her than for any of the rest of us. Thousands upon thousands had spent their entire lives in her service. She evidently felt how magnificent she was, but probably did not ascribe it to the little caterpillars that had made her silks.

[The above we take from a lecture recently delivered in New York by Dr. Trimble, the subject being, “The Wonders of Creation as exemplified in Insect Life.” He succeeded in interesting his audience for nearly two hours. There is something fascinating in the wonders of insect life which never fails to arrest the attention of both young and old; and the Doctor’s characteristic humor took nothing from the interest of the occasion. Lectures on this and kindred subjects, in our rural towns, would be more useful and entertaining than many which are selected for the purpose.—ED.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."



GLADIOLI.—In another place we have alluded to a lot of Gladioli received from the Messrs. Thorburn. We have since examined the parcel in detail, and find it to contain eighty-seven varieties, embracing not only those we have described, but many other fine kinds, besides a number of entirely new French varieties. They are all named and described in the Messrs. Thorburn & Co.'s catalogue. We are immensely delighted with our collection, and anticipate much enjoyment from them. The Gladiolus is so easily grown, and is so beautiful, that it should find a place in every garden.

ERRATA.—We have a few more to correct. In Dr. Thomson's article, p. 34, line 20 from top, read, "awards of fruit committees," &c. P. 35, line 12 from bottom, read "indite" instead of "invite," which makes some difference. P. 36, line 18 from top, read "November, 1855," instead of "1853." Same page, line 20 from bottom, read "DANIEL WARFORD" instead of "Richard Warford." P. 81, first line of Dr. Grant's article, read "many" instead of "my." P. 83, line 8 from bottom, read, "will not form a lasting union," &c. We hope now to go on as usual, without the recurrence of such things.

THE NEW CALADIUMS.—In our notice last month of the new Caladiums, it is stated that they were *originated* by Chantin. *Introduced* was the word; the forms went to press without being revised by us. They were introduced into Europe by Chantin, just as they were introduced here by Mr. Buchanan of Astoria.

MOTTIER'S WINE.—Just after our notice last month, but before he could possibly have seen it, we received a sample from Mr. Mottier himself. This was made "on the lees," is two years old, and in all respects is a beautiful wine. It is rather lighter than that noticed last month, has a mild bouquet, and is peculiarly rich and delicate. An old wine taster from Portugal, to whom we showed it, said it was "splendid," which confirms all that we said last month. Not its least recommendation is its undoubted purity; and this is a point we have tried to impress upon all our wine makers, and they succeed just in proportion as they attend to it. We must get rid of all adulterations or additions.

THE DOUBLE ZINNIA.—We present our readers with a "portrait" of the new Double Zinnia, taken from the London *Gardener's Weekly*. It is said by the editor to be a "correct representation," of the natural size of the flowers. It is remarkable for its great symmetry. The plants were grown by the Messrs. Carter, of Holborn, who received the seed from a correspondent in Oude, India. The Messrs. Vilmorin also received their seed from India. This is said to be all that is known of the history of these new Zinnias. "It will be seen from our cut," says the



DOUBLE ZINNIA.

Gardener's Weekly, "that the ordinary florets of the centre of the flower in the common Zinnia are here transformed into flat, petal-like colored ones, similar to those on the border of the flower, (florets of the ray,) and we are informed from the before-mentioned respectable seedsmen, that this character is permanent, and that the plants come in as true from seeds as China Aster, the different colors separate, and the double forms still double." So far as we can form an opinion from the above engraving, and what is said by Dr. Lindley and others, we are disposed to think that we have a substantial acquisition in the Double Zinnia, one the more to be prized since it is in its greatest perfection at a time when many other flowers begin to fade. It is to be grown the same as the single varieties.

A PORTFOLIO PAPER FILE.—We have just added to our library an article which we think will be useful to all our readers, or to any person who takes a newspaper or a periodical. By a very simple arrangement the papers are filed away in a substantial cover, which answers all the purposes of binding. Letters, music, drawings, &c., can be filed just as well as newspapers, as the portfolio is made of various sizes. It is called Jacobs' Patent Portfolio Paper File, and we suppose can be found at the principal bookstores.

THE DELAWARE GRAPE.—We have just been shown a letter from J. Fisk Allen, Esq., of Salem, Mass., in which he makes an allusion to our article on the Delaware Grape. He says: "I am glad to see Mr. Mead, in December number of *Horticulturist*, giving his opinion of the Delaware Grape as a native. I pronounced it a native years ago when it was first said to be *Red Traminer*. And Dr. Wight in report of fruit committee of Massachusetts Horticultural Society, so stated it, and published it to the world in their annual report. I had *Red Traminer* in fruit then for years, and have been annoyed by the statements constantly recurring pronouncing it a European variety." Mr. Allen, who has grown the foreign Grape so extensively, and studied its habits closely, may fairly be presumed to know something of its characteristics. It is peculiarly gratifying to have our opinion confirmed by such high authority.

ITALIAN BEES.—"Are Bees horticultural subjects?" Certainly, and sweet ones too, only they are not to be handled overmuch. A friend of ours has become ecstatic over his Italian bees and considers Mr. Parsons a benefactor, &c. We subscribe to this, and to all that can be said in praise of Bees, but our friend's article is too long for one insertion, and we can find no break in it. It might well be shortened. In the mean time, our readers will do well to look after these Bees, (we mean to make a change in our hive,) and read Mr. Spangler's new *Bee Journal*, a capital work, which will tell them much they ought to know on the subject.

A ROCKER WITHOUT A ROCKER.—Stopping at a friend's a few evenings since, we were placed in a chair that suited our tired condition exactly. It stands on castors, and can be rolled easily when necessary. It can also be fixed in any reclined position, which adds much to its value as an *easy chair*. The rocking motion is easy, and in all respects pleasant. The style of the chair is elegant, making it an ornament to any drawing room. It was invented by Mr. Wells; and if he will only get up a pattern within the means of our rural friends, he will entitle himself to our thanks.

PEACH BUDS.—Mr. Mackie, writing from Clyde, N. Y., says: "Peach buds mostly killed here, though not quite all. 12° below zero at 9 p. m., 7th inst."

BROOKLYN HORTICULTURAL SOCIETY.—There seems to be a feeling quite prevalent among our rural friends that our Horticultural Societies might be made productive of much more good than they now accomplish, and this feeling we share very largely. Some of the members of the Brooklyn Society are moving in this matter, and we believe the society is being reorganized on a more useful basis. We hope the matter will not be allowed to rest till this has been done. Several articles have recently appeared in the *Brooklyn Eagle*, by members of the society, which are suggestive. "Brooklyn," the first writer, thinks "the society should have a 'local habitation' as well as a name, and should not be resolved out of existence for six months after each exhibition." In this he is undoubtedly right. The society, in some form or other, should be found somewhere each working day in the year, and this is entirely practicable. He thinks, also, that a society should have some other object than holding two flower shows a year, an opinion which we have often expressed. He suggests, first, that the society should have a

proper exhibition room or "Gardener's 'Change" in some central location; a good suggestion, not without its difficulties, but worth a strong effort. *Second*, that weekly evening meetings be held; good again. *Third*, that a Reference and Circulating Library be established; nothing could be better. He has no objections to exhibitions, but thinks more than two should be held, so that the various classes of fruits and flowers could be seen in perfection, and asks, "What satisfaction is there in looking at unripe pears and grapes?" He would entirely abolish prizes as worse than useless, and reply upon a proper *esprit du corps* among the members; to which the gardeners would probably demur. But if prizes are offered, he would have them divided into three classes, one for commercial gardeners, one for hired-gardeners, and one for amateurs: a classification which we have often favored. He then very properly suggests a course of lectures, and closes as follows: "A Society established on a plan of this kind would, I think, command support and respect; much dissatisfaction seems to have arisen lately at the degeneracy of horticultural and kindred societies; they are losing the countenance of those necessary to their useful existence, by their inertness, and by mixing up horse-racing, female equestrianism, patchworks, daguerreotypes, gambling, quack medicines, brass bands, &c., with their exhibitions."

"Improvement" in a few days follows up the subject in the same view. He thinks a "*Model Society*" could be maintained here in active life, and its members counted by thousands instead of hundreds, and instead of *begging* the public to support it, they would be eager to become members of it, even at three dollars per annum." Such a Society Brooklyn ought to have, and it would be a fitting reward for such exertions as John W. De Grauw has made. "Improvement" suggests, *first*, that, for want of a suitable garden, a perpetual exhibition be opened, where visitors can see specimens of choice plants, learn where they can be bought, their price, &c. This would present peculiar advantages to both purchaser and seller. *Second*, that Catalogues of all the Nurserymen, Gardeners, &c., be kept, which would afford further facilities to purchasers. *Third*, that instead of money and medal premiums, a drawing or photograph of the prize article itself be given, the Society also keeping one, as suggested in the HORTICULTURIST some months since. This, we think, would work some good results. *Fourth*, that a cabinet of models, drawings, woods, an herbarium, &c., be made. Nothing could be more to the purpose. *Fifth*, that there should be a Library and Reading Room, and that clubs be formed so as to get magazines, &c., cheaper for members. A capital idea. *Sixth*, that the Society correspond with individuals and Societies, and solicit an exchange of plants, seeds, &c., and also import and collect new and rare plants and seeds for distribution among the members. Good again. *Seventh*, that weekly meetings be held for discussion, lectures, &c., in connection with an exhibition of specimens, and that the proceedings be published. Precisely one of the things wanted. *Eighth*, that all of the above be *free* to members, but that a small charge be made to the public for admission to the lectures, library, and exhibitions. He thinks ladies, children, invalids, business men, mechanics, and gardeners would find this a delightful place in which to pass an hour. Yes, instruction and pleasure to a much greater degree than in many places where they sometimes "pass an hour." *Ninth*. "Have a standing advertisement of the aims, objects, and advantages of belonging to the Society, the location, officers, exhibitions, meetings, &c., so that the public will know *where* to find it and *what* it is." This kills "*several birds with one stone*." *Tenth*, he thinks "there is no way in which a person could invest *three dollars* and receive so much benefit, or do so much good by spreading abroad such a refining influence as the Society would have." In this we agree with him, provided the other things are done. He concludes by saying to those who think the thing can not be done, "Try it. Give the public the worth of their money in practical knowledge, and they will both support the Society permanently, and patronize the gardeners." There is a mutual obligation involved in this point which ought to be further

elucidated. The idea of "Improvement" clearly is, a *working society*, one that will do something.

We next have "Brooklyn" in response. He excepts to the expressions, "Instead of begging the *public*"—"The *public* will not support us"—"Give the *public* the worth of their money." He thinks the Society should calculate little on the "*public*," using the term in its broadest sense; that it should be more especially a society for *gardeners*, and that the secret of failure may be found in the fact that the *public* has been appealed to rather than they. He says, "Before the Society undertakes to educate the *public*, I think it had better secure tutors for the job by educating the *gardeners*." That is pretty pointed for one who "goes in" for the *gardeners* to the exclusion of the *public*. But will the *gardeners* support a society of themselves? He says, "The *gardeners* are not beggars, and should not want the *public* to support a society for them. It is for their benefit, and they must pay for it, and I believe will be found willing to do so, if they can get the worth of their money." It seems to us clear that they will not without this, and then the *public* must help them. The fact is, it is hard to keep clear of the "*public*." "Brooklyn" next takes up the "finance question." "Standard works of reference which every *gardener* ought to have access to will certainly cost fifty dollars; interest on this, say three dollars a year." Then there are horticultural and agricultural papers, without which he can not keep posted, which will cost him seven more. If he buys these himself, there will be an expenditure of ten dollars a year to prevent him from getting behind the times, and half the sum would support a good society. The idea is, to show that a *gardener* can afford to become a member of a society. He thinks five dollars a year none to much for either trading *gardeners* or the *public*. We do not think either of them prepared for this yet; but in so far as "Brooklyn" would have *gardeners* intelligent and self-reliant, we go with him heartily; and this would seem to be his main purpose. We would give the intelligent *gardener* a position of social equality, and erect no barriers between him and the *public*; and in this "Brooklyn" will no doubt agree with us. The *gardener*, at present, is his own worst enemy. Why will he not see this? "Brooklyn," in conclusion, does not "think it advisable to do any thing in the matter of a Botanical Garden until the 'mission' of the Society in other ways is in process of fulfilment," in which we agree with him.

In a letter just received from an active officer of the Brooklyn Society, he says, in reference to the failure of societies, "Their failure seems to me to arise from not giving their members and the *public* such information as they require." Again: "It seems to me there are thousands in our cities and towns who, like myself, have a small place and a real love for such things, and it is to such societies we should look for information; such a society should be an 'Exchange' where all such knowledge could be obtained. If they were such, I don't believe we should see such accounts published of them. I hope this question will be continued, and all our Societies aroused and carry out the objects they were designed for."

We shall recur to this subject again, in the hope that some good may result from it. In the meantime, we commend these suggestions to the consideration of all Horticultural Societies.

BOOKS AND CATALOGUES RECEIVED.

Fourth Annual Catalogue of Plants, &c., cultivated and for sale by Edgar Sanders, Lake View Flower Gardens, Chicago, Ill.—Consists mainly of a fine assortment of bedding plants, Dahlias, Roses, &c.

Transactions of the Massachusetts Horticultural Society for the year 1860. From Eben Wight, Corresponding Secretary.—It is made up of Reports from Committees, Lists of Prizes awarded, an interesting Address from President Breck, a Zoological Report from Professor

Jenks, complaining of having nothing to do; an interesting article from Mr. Sprague on Introduced Plants, a very good one from E. S. Rand, Jr., on Orchids, and others, the whole making a valuable record. It is an interesting fact, that the property of the Society, at the present time, amounts to the handsome sum of \$89,540.83. It may well pass for a "solid" society.

Seventh Annual Catalogue of Choice Verbenas, cultivated and sold by *Dexter Snow*, Chicopee, Mass. 1861.—The Verbena is Mr. Snow's specialty, and we have here a splendid collection.

Catalogue of Green-house, Hot-house, and Hardy Herbaceous Plants, for sale at *Bridgeman's* Horticultural Establishment, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses, Astoria, N. Y.—A very neat Catalogue, embracing the best old plants, and a good many new ones.

Descriptive Catalogue of Flower Seeds, with Practical Directions for their Culture and Treatment. *James M. Thorburn & Co.*, 15 John Street, New York.—Neat and compact, embracing about every thing in the way of flower seed that can be thought of.

Vines, Plants, &c. *J. H. Boardman*, Brighton, Monroe Co., N. Y.—A circular, consisting of well known fruits.

Abridged Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, and Plants, cultivated and for sale at the Monroe County Nurseries. *Gould, Beckwith, & Co.*, Proprietors, Rochester, N. Y., 1860—61.—Another well-printed catalogue, with choice contents. We do like good ink and paper.

Catalogue of French Hybrid Gladiolus, (Seedlings of *Gandavensis*,) and other Spring Bulbous Roots, &c. *J. M. Thorburn & Co.*, 15 John Street, New York. 1861.—This embraces the fine collection alluded to elsewhere. It also contains a list of novelties in the way of flower seeds larger than usual.

Descriptive Catalogue, No. 8. French Hybrid Gladiolus, and other Summer and Autumn Blooming Bulbs, for sale at *Bridgeman's* Horticultural Establishment, 876 and 878 Broadway, New York. 1861.—This embraces, with some additions, the collection we examined last season, some of the best of which we have described in another place.

Great Upper Canada Seed Establishment. Descriptive Catalogue of Seeds for the Farm, the Kitchen Garden, and the Flower Garden; also, of Culinary Roots, &c., for sale by *John A. Bruce*, Seedsman, Nurseryman, and Florist, 46 King Street, Hamilton, C. W. 1861.—Not only a catalogue of seeds, but also of Garden Implements, Fertilizers, works on Horticulture, choice fruits, &c.

Catalogue of Selected Roses and other Hardy Plants, including both old and new Varieties, cultivated and for sale by *James Portland*, at Green Mount Garden, Baltimore. 1861.—The list of Roses is particularly fine. There are also Azaleas, Camellias, Dahlias, Verbenas, Grapes, and other good things.

Spring Catalogue of a choice Collection of Floricultural, Vegetable, and Agricultural Seeds, &c., to be had of *William Elliot*, Seedsman and Florist, 81 John Street, New York.—Mr. Elliot gets a good deal in a small compass, and gives some good practical suggestions to the amateur.

The Mother's Magazine and Family Circle. By Rev. B. J. Relyea, Editor and Proprietor, 897 Broadway, New York.—As its name indicates, this Magazine is addressed specially to mothers: the home circle is its peculiar sphere. It is ably conducted, and calculated to exercise a benign influence.

Correspondence.

EDITOR HORTICULTURIST:—I was raised in the parlor, and when I was married, a few years since, scarcely knew a lilac from a locust-tree. However, I married a farmer, and came to the country to live, and *opened* some eight or ten acres for ornamental improvement; I say *opened*, for there was a regular cutting of corn-stalks to begin with, to say nothing of the removal of *pig-sty*, tan-house, ash-house, and "other things to match," that we found just in front of our small old-fashioned country house. Now, you, who are accustomed to your hundreds of acres of "improved ground," will smile at my ten acre. But in *this* part of the country it is the most unheard-of extravagance and folly. Soon after I had had my "yard enlarged," a very practical neighbor said, "You are very extravagant to put all the farm in the yard." I replied, that ten acres was not *all* of 350 in the first place, and in the second, that it was economy; for, said I, you have a small yard, and a small garden, orchard, and meadow—separate fences around *all*; mine are all together, and I save fencing. This is the way I talked: and I loaned my books, and divided my flowers and shrubs with them, and *now* such an "enlarging of yards," and digging and planting as would astonish you! But my own ignorance was a worse enemy than the prejudice of others: however, I did the most sensible thing that could be done, I subscribed for the HORTICULTURIST. I had no gardener, couldn't tell when I should be able to afford one, but thought I might venture to have the farm hands plant a few things, and let them be growing; and when we commence planting, it ends, I presume, when there is nothing more to plant, and no place to plant it; and so I planted on, and on, and on, hiring an Irishman to work with me, until I count my fruit and ornamental deciduous trees by hundreds, and have seventy handsome evergreens, such as Hemlock, White and Scotch Pine, Norway Spruce, Balsam Fir, Arbor Vitæ, &c.; and all the Spirreas I have ever heard of, as well as Lilacs, Flowering Peach, Cherry, Currant, Syringas, Rhus cotinus, Dogwood, Redbud, and every kind of flowering shrub, and shrubs with ornamental berries, not forgetting the evergreen shrubs, such as Holly, Pyracanthus, Mahonia aquifolia, &c., and no one would ever know this to be the same place that it was four years ago. We haven't house-room enough for a white gardener, but in the plan of our new house I have a room for a single man, and he can't get married until we are able to build him a gardener's cottage. So for the present my liege lord has given me one of the farm hands for gardener. "I know my duty better" than to send the word *slave* to a northern P. O. *these* times.

But I set down to ask you a few questions, if you will be kind enough to give me the answers through your valuable paper, for of course I don't expect you to devote your valuable time replying to such a preamble as this. I not only *read* the HORTICULTURIST, but I *study* it, every day of my life. I have the back Noa bound, and when I am particularly interested in any one subject, I read every article on that subject, in all the volumes I have. But I can't find out what's the matter with my apple-trees. Some six, eight, or ten inches from the ground, and sometimes nearer, the bark has turned black, and dead, and is dropping off; and in some cases there are small round holes, as if bored with a gimlet; but all the trees that have lost their bark are not bored. Do the birds, woodpeckers, &c., make these holes? or is it the apple-borer? or, in the condition of the bark called *blight*? if so, how can I save *these* trees? Must I let suckers from the stock grow round them, to shade them? And hereafter, to avoid the trouble, shall I buy my trees branching within an inch or two of the ground, that the leaves may protect the trunk—from what, sun or wind? They are such beautiful young trees, just coming into bearing—and such varieties as Pryor's Red, Rhode Island Greening, &c. And then my pear-trees, some of them, Louise Bonne, Passe Colmar, Vicar of Winkfield, &c. (oughtn't

that to be *Wakefield*? Where is *Winkfield*?) have a fine crop of pears every year, but they drop off when no larger than my thimble. What shall I do?

And where can I procure a rose, Tea China, or Souvenir d'Elize? I have been trying to find it ever since I saw the plate in the *HORTICULTURIST*. Is it perfectly hardy? will it stand out in Kentucky without any protection? I have an Isabella Grey. Winter before last I thatched it, and in the spring it was dead to the ground. Last winter I didn't thatch it, and it died to the roots. This winter I have thatched again slightly, after filling stable manure around the stem. Although it sends up vigorous long shoots every summer, it has never bloomed, and so I presume it blooms on the old wood, or on shoots from the old wood. What must I do with this? I have had a Beauty of Greenmount and Woodland Margaret, but have lost them both. I mean to replace them, however. Woodland Margaret bloomed once, and was certainly the most fragrant rose I ever saw. Are these two *perfectly hardy*? How ought we to manage them in winter in Kentucky? My *bush* roses won't bloom; how shall I *make* them? I have a large bed for bush roses, Palm Leaf, and the soil was rich and black, light and loose, with clay bottom, which I have never seen, however, and I have seen down four spades deep. When I made the bed, I put some rich earth where there had been oat stacks for years and years, and since, every fall, I cover the bed several inches with stable manure, and in spring fork it in; do they want sand?

You won't let me write to the *HORTICULTURIST* again, because I don't know when to stop. Please reply to my questions to *Maggie*, through the paper.

I have sent you several subscribers, only one from this post-office, however, William Hoffman, but I mean to send more.

Respectfully, CARRIE D. M.

Mount Sterling, Kentucky, 17th Jan., 1861.

[It is a lucky thing you "married a farmer a few years since," Carrie, or we should be "dead in love with you." Now don't show this to your "liege lord," unless he has got a soul as big as your own. Why isn't Kentucky just over our river instead of the Ohio? We'd soon be over and help you out of your troublea. You went to work heroically, and have your reward. If your neighbor talks to you any more in that way, just box his ears. You were right, and reasoned like a woman of good sound sense and sound taste, and as the best evidence of this you subcribed for the *HORTICULTURIST*. Then you planted and planted, and now you count your trees by hundreds. That's admirable. Would that every State, and city, and village, and farm had at least one such woman! What strange scenes of beauty would spring up all over the land! Tell your "liege lord" that we say he must provide you with a gardener's cottage this very spring; the gardener might take it into his head (they get strange things in their heads sometimes) to get married, and then what would you do? But if you have told him he can't get married, then he is bound not to do it. Now, Carrie, you can send any thing you please to our P. O. these or any other times, and if there's any fighting to be done about it, we'll do it. A man don't get such a woman to defend every day. You see we are getting a little worked up.—Certainly, we'll answer all your questions, and if you hadn't "gone and got married" a few years since, we might ask one; but it's no use now. You do precisely right in *studying* the *HORTICULTURIST*, and following a subject up, and that is what all ought to do. It is not the woodpeckers that damage your trees; it may be the blight, but we suspect that the borer is the enemy concerned in this matter. Examine the holes in all your trees, and get the borers out either by cutting them out or running in a wire; remove, also, the dead bark. Then get some *common* tar, and reduce it to the consistency of thin paint by adding hot water; apply this to the trees with a brush about an inch below the surface, and six or eight inches above. The tar must be used as a preventive, not a cure; where the grubs are already in the trees they must be got out with the knife or wire. By no means let the suckers grow about

your trees; cut them *clean out*. Let your branches start two or three *feet* from the ground; this will not only afford protection to the trunk from the cold winter's wind, but your trees will come earlier into bearing, and yield better fruit. Vicar of *Winkfield* is correct. You have been reading Goldsmith. The pear was discovered in France by a French curate, and was hence called *Le Curé*. It was introduced into England by the Rev. Mr. Rham, of Winkfield, a distinguished agriculturist, and then took its present name. Your pear trees are probably planted too deep, or you may disturb the surface roots too much in working the soil; we can think of no other cause. We can have the Rose sent to you, but it will not be hardy in Kentucky. The Isabella Grey is not hardy enough for you; the only thing you can do is to bend it down in the fall, and cover it with earth. You might grow it in a large pot, plunge it in summer, and in the fall put it in a cool cellar. You must have the old wood to secure the flowers. If you replace Beauty of Greenmount, &c., you will have to bury them, as suggested above, or you will lose them again. Your "bush roses" *ought* to bloom in a deep, rich, well-prepared bed. Perhaps the buds get winter killed; if so, cover the bed with cedar brush during the winter. But if they are Hybrid Perpetuals, they ought to bloom in the fall, *anyhow*. What are they? Yes, we will let you write as often as you please; and you must do so till your roses bloom and your pears fruit. If we can only get a full understanding of your difficulties, we know we can enable you to overcome them. Thank you for the new subscribers and the promise of more. Not one of them can refuse you.—ED.]

A SECOND BARNUM.—MR. EDITOR:—Freed from a cloud of tobacco smoke, sir, strong enough, to suffocate any of the fair sex in the metropolis, we ran away from it, and got into Newport, yes, Newport, sir, to see the "*Barnum Orchard House*." The never-resting mind of man "wanted to see some of the new discoveries" as well as "*A Close Observer*," (and "now I sit down, and give vent to my feelings upon a subject that has filled my thoughts for some time, and now, like a bird that has escaped from its cage, give evidence of its satisfaction by lifting up its voice.") We arrived at Mr. Lawrence's beautiful place, and were received by Mr. Chamberlain, the gardener, with good old English cheer, as such a man with such a good natured disposition is bound to show to all and every visitor. The glaring statements made by "*A Close Observer*" worked up my curiosity so much, Mr. Editor, to think that such gross duplicity could be practiced by a gardener on his employer and visitors in general, that I was determined to go and see something of the duplicity in its commencement; for if vines were grown and fruited in wire baskets, *now* would be the time for its commencement. We never had seen such things, it is true—never had seen Peaches or Apricots grown as orchids, and doubted its practicability. But, again, to think for one moment that the proprietor of such a place could be so duped throughout a whole season, by a gardener in his employ, was more than my common sense could credit. So we went to see, and we did see. See what? First, a most beautiful range of glass nearly 300 feet in length, and built in as thorough and complete a manner as I ever saw houses built. This range of glass is divided into six compartments, for various purposes, and for which it appears to be well adapted. But what did we see? Well, we saw the wire baskets, and we saw grape-vines growing in them, and we saw that they were good grown vines, canes nearly four feet long and about three-eighths of an inch in diameter; and we saw from these self-same vines, young green shoots having on them several good bunches of grapes. Now do not let us be misunderstood; these bunches were not in flower, but coming into flower, and we have seen grapes enough to know what such a shoot ought to produce under ordinary management, and the general management we saw manifested on the place warrants our opinion in the ability of Mr. Chamberlain being fully up to the mark. Well, what else did we see? We saw Peach trees in wire baskets, very prettily trained on them, and we saw Apricots in the same way, and we saw that they were just set; mind

now, we do not mean just set in the basket, but the fruit was just set, and commenced swelling off and in good earnest. On this important point rested all our curiosity; so we were satisfied, and you, Mr. Editor, and every one else who doubts the subject, can go and see and feel for yourselves. This is not all we saw; we saw just what you would very much liked to have seen in your office, and on your table—a box full of varieties, to be sent as a present to a friend. It contained a first-rate, luscious Pine-apple, 12 inches long, with the sugar running freely from its pips; ripe Strawberries, French Beans, new Potatoes, ripe Tomatoes, Cucumbers, Radishes, and Mushrooms; and we firmly believe, although we at first felt a little Thomas like, that Mr. Chamberlain will send you, Mr. Editor, down to New York, one of the self-same baskets, with these very same grapes, *not tied on them*. Ripe grapes, grown in wire baskets, so that you can cut and taste for yourself; and I think he will also allow you to give a bunch to your "Close Observer," so that its sweet nectar may open his soul a little more, and wash out some of that dross from his carnal vision, and then he will be enabled to have perhaps a better heart, and one that can feel for another.—Respectfully yours,

A SECOND CLOSE OBSERVER.

[It would seem, from the above, that the same things present themselves very differently, even to "close observers." This "Second" one of the name looks at things cheerfully. We know him to be capable of enjoying good things, even to a Pine-apple "with the sugar running out of the pipe." Now we have a pair of eyes which we can trust implicitly, and a taste which we have never had occasion to reproach, (though it has more than once been bitterly tried,) and we have pretty much made up our mind to go to Newport and see whether "these things be so." We have had the best of evidence as to the character of the fruit grown by Mr. Chamberlain, but we want to be enabled to "draw the line" between these two observers. In the meantime, if that basket gets forward before we do, we hope to have the pleasure of seeing it on our table.—Ed.]

GRAPE GRAFTING.—I have just read, in your January No., *El Medico's* Treatise on Grape Grafting, and if you think proper I will add my experience in the same art. In the spring of 1859, I imported direct from Los Angeles cuttings from the celebrated California Grape. They arrived when my vines were getting *into leaf*, but having some stocks which were useless to me, I determined to try the experiment, but without much hope of success. I cleft grafted about one dozen stocks, a few inches above the ground; wrapped them carefully with bast and wax, and, to my surprise, they all took, and many of them grew from twelve to fifteen feet during the summer; and what was quite as remarkable, most of them bore fruit the same season.

I simply give the facts. I will leave it with others to make comments.

New Orleans, Feb. 2, 1861.

H.

[Your climate is infinitely more favorable to the success of the operation than that of "El Medico;" still, your marked success ought to encourage him to further efforts. We are glad to see that the trials of "El Medico" have awakened so much sympathy. He must not give it up yet.—Ed.]

TO THE EDITOR OF THE HORTICULTURIST:—Sir: I wrote some weeks ago to request that you would inform me, through the Horticulturist, whether you knew of any good Heart or Bigarreau Cherry later than Downer's Late. Will you have the goodness to say? May I trouble you to give a list of six Heart and Bigarreau Cherries, of early and late ripening, which you would recommend, having especial regard to hardiness in the tree. My former letter was no doubt destroyed in the late fire.—Your obdt. servt.,

Toronto, Canada, 25th Jan'y, 1861.

AN OLD SUBSCRIBER.

[We know of but few good cherries later than Downer's Late, most of the later kinds not being worth growing. The best of those that ripen later are the following: Black Bigarreau of Savoy, Buttner's Black Heart, and Sweet Montmorency, about the middle of July. Pierce's Late, last of July. The Hovey, of which we have only seen the fruit, last of July; but our Boston friends say it hangs on till first of August. Then, ripening usually about the time of the Downer, we have the Amber Gean, Black Eagle, and Florence. There are some of Dr. Kirtland's seedlings which we have not seen, which are said to be much later and of good quality; his early kinds we know to be so good, that we should be willing to take the later ones on trust. In regard to early and late Bigarreau and Heart Cherries, you will find the following to give you a succession of delicious fruit. Early Purple Guigne, last of May; Knight's Early Black, Black Tartarian, Gov. Wood, Elton, first to third week in June; Bigarreau or Yellow Spanish, last of June; Holland Bigarreau, first of July. This is about the relative time of ripening, when planted under the same conditions. Your former letter shared the common fate, and we are obliged to you for having repeated your querier.—Ed.]

Will the Editor of the HORTICULTURIST please answer the following questions at some convenient time?

What would be the disadvantages (if any) in planting a grape-vine on the north side of a building, and training the branches on the south side?

Would plaster be profitably used in *very* sandy soil?

What are well-ripened Concord Grapes worth, wholesale and retail, in their season, in New York?

I have a water-tight vat, some ten feet square and three feet deep, in which we put soap-suds, slops, and refuse matter from the house. The privy is over one end of it. The soap suds accumulate faster than I can find absorbents. What absorbents would you recommend, and what deodorizers? Please tell us the best thing to be done to prevent its giving off any thing injurious to health in hot weather?

R. C., Jr.

Provincetown, 1861.

[The disadvantage would be, that your border would never be properly warmed by the genial rays of the sun, the soil would be liable to become sour, &c., and your grapes would be lacking in flavor; your vines would also be peculiarly liable to mildew. If you *must* plant on the north side of the house, let your border be most *thoroughly drained*, and if not already sandy, use sand freely and a portion of vegetable mould, the object being to obtain a light and warm soil. The manure used should be old and thoroughly decayed. You may thus obviate some of the disadvantages. Plant Delaware, Concord, or Diana, but not Isabella or Catawba. —We do not think you can use plaster profitably on *very* sandy soil, except as a top dressing to grass. *Muck* is what you want.—The price of well-ripened Concords varies in different seasons from 15 to 25 cents or more per pound. We saw some handsome bunches sell last fall for 30 thirty cents per pound.—In regard to your vat, *dry muck* is the best absorbent; for a deodorizer you can use charcoal dust, gypsum, or green vitriol, (sulphate of iron.) Two or three pounds of green vitriol or copperas, dissolved in a pail of water, are sufficient to deodorize a large mass of material like the contents of your vat. You will probably find the muck and charcoal, however, to answer all your purpose.—Ed.]

FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.

(Continued from page 104.)

Subject 3. Can the yellows in the peach be introduced by the importation of trees from infected districts?

H. N. LANGWORTHY thinks the yellows can be communicated by using a knife in budding which had previously been used upon an infected tree. A tree diseased from the yellows will

ripen its fruit a month earlier than a healthy tree; but it will die the same year. It gives the leaves a yellowish appearance, and gum oozes from the branches.

L. B. LANGWORTHY thinks yellows is contagious. Knew of a case where five hundred fine healthy peach trees were set out, were well cultivated, and made a fine growth. In three different parts of this orchard some trees were struck with the yellows, and around these parts there were circles of diseased trees. Knew of one person who desired to test this question, and inoculated a healthy tree with the virus, and it killed it. I budded a tree once with wood from a tree with yellows, and I thus killed my tree.

Dr. SYLVESTER agreed with the gentleman. David Thomas once received trees from New Jersey which were diseased; but he cut down and burned at once every tree which showed signs of the yellows. If this disease is allowed to extend in western New York, it will be as fatal to our trees as it is in New Jersey, where one or two crops of peaches are all that the fruit-growers expect from a planting of the trees.

C. L. HOAG impressed upon members the importance of avoiding these yellows in western New York, if possible. A friend of his had lost about all his orchard by planting a diseased tree from the east.

CHARLES DOWNING has known the disease for twenty or thirty years, and believes it contagious. If a diseased tree remain, all the surrounding trees take the disease and die. The only way is to remove the diseased tree or trees; and whenever and wherever I see one I take it out. The disease can be carried by matter or "virus."

Mr. SHARP would warn people that many New Jersey trees are being sold here; was fearful lest we become like New Jersey.

H. E. HOOKER knew of old orchards which were planted with trees brought from New Jersey, and which are this day good trees; have also seen orchards planted with trees from the same locality, and these trees have had the yellows. Thinks it best to be cautious as to planting New Jersey trees. No conscientious nurseryman would be guilty of filling his orders with diseased trees, nor would he be implicated in sending to any farmer trees which would or will infest their standing orchards.

Dr. SYLVESTER remembered that in 1836 there was not in New Jersey one-tenth of the disease called "yellows" which there is at present. The New Jersey nurserymen send here for their peach pits to plant, and evidently think that the disease is not only contagious, but can be communicated by the pits.

Mr. DOWNING thought the same.

Mr. HOOKER stated that New Jersey trees sent south do not have it.

Mr. BARREY's opinion was that yellows is *not* contagious; but still would prefer not to buy trees from infected districts. Some persons think it is communicated by the blossom. The cure for the yellows seems to be a good fertile soil. The cause of it (I think) is a poor soil; impoverished by heavy cropping; and by keeping trees in such soil we can make it constitutional.

F. W. SAY, of Monroe County, never saw a case of it in his town, and farmers raise large crops of peaches there. The best orchards in Greece came originally from New Jersey, fifteen or sixteen years ago; but have not seen it in trees brought later from the east.

Mr. BARREY.—All the young peach orchards in New Jersey look as healthy as any of ours do, but when three or four years old they have the yellows. Nursery trees there do not have, or at least do not *show* the yellows; but, generally, after bearing their second crop of peaches, the New Jersey orchards all die. Still in some parts even of New Jersey they are exempt from the disease.

(To be continued.)





CALADIUM CHANTINI
for THE HORTICULTURIST
Published by C. M. SAXTON, BARKER & CO, New-York.



Fig. 1
Lily
Stamens

Hints on Grape Culture.—II.



In our former article we have thrown out, in as few words as possible, some necessary hints in regard to *exposure* and *shelter*. The latter is a matter of the first importance, to which little attention has heretofore been given, and which we shall enlarge upon more fully at another time. We shall now give our attention to some hints on the *Soil and its Preparation*.

There has been no little discussion, and some difference of opinion very naturally, as to what is the best soil for the vine. In general terms, it may be said that it will grow in almost any soil, from the lightest sand to the heaviest clay; but of course with varying results, and these, in many instances, far from satisfactory. There is a preference in soils, and in some cases this preference is of a very decided character. A pure sand and a stiff clay are almost equally to be avoided; the latter, however, in some respects, is to be preferred. They are both nearly equally expensive to be put in good condition for growing the grape. Between these two extremes there are many kinds of soil well suited for our purpose. The soil best adapted for the grape is one that is light, open, and warm, and what is usually termed a sandy loam naturally answers to these conditions more nearly than any other. Whatever is done to the soil artificially, in the way of preparation, should be with a view to assimilate it as nearly as possible to this character. There are some soils which, in respect to their constituents and mechanical condition, are naturally in a good state for the successful growth of the grape, except, perhaps, they may not be sufficiently deep. What is needed, in precise terms, is this: a soil that is light, moderately rich, deep, warm, and porous, and that contains a due proportion of carbonaceous matter. It should be *light*, because the roots will more readily take possession of it, it will be easier to work, and more largely benefited by necessary top-dressings, as will subsequently be shown; *moderately rich*, that the vines may have sufficient food for the production of good wood and the best fruit, but not so rich as to produce rank wood at the expense of the fruit; *deep*, not only that the roots may have ample room to ramble in, but that the injurious effects of drought and heavy rains may be avoided; *warm*, to insure as far as possible the health of the vine, and promote the early ripening of wood and fruit; indeed, ripe wood and ripe fruit are almost convertible terms; *porous*, that water may never lodge in it, and that it may readily absorb dews and atmospheric moisture, the latter never being entirely absent even in our arid climate; the soil should contain *carbonaceous matter*, because, in our opinion, it not only gives warmth to the soil, but is intimately concerned in the production of fruit of the highest excellence for the table. It will be perceived that the above conditions bear such an intimate relation to each other, that one can not be removed without materially impairing the others; and this fact presents a strong argument of their necessity. To elucidate these points fully would alone require several pages; but our present purpose, as already stated, is mainly to throw out suggestive "hints" as we go along, lingering a little from time to time at some particular point, as the importance of the subject may seem to demand.

The *subsoil* is scarcely less important than the surface soil; for if, in any particular spot, this can not be brought within our conditions, it must be abandoned, no matter how good the surface soil may be. It becomes, therefore, a matter of

the first necessity, in locating a vineyard, to examine the character of the subsoil, and see whether, by trenching, draining, etc., it can be brought within the conditions named. In a majority of cases this can be done; but it may be well to mention some in which it can not. For example, a soil immediately underlaid by beds of marl, as in some portions of New Jersey, should not be selected as a site for a vineyard. The vines will grow finely for a few years, but as soon as the roots penetrate the cold, damp strata of marl, mildew and rot appear, and render a crop of grapes entirely hopeless. Rocky subsoils sometimes, owing to their formation, hold water; and it being difficult or impossible to drain them, they should then be avoided. A subsoil of stiff clay, unless it can be under-drained, can not be brought within our conditions, and must also be avoided. All subsoils, in short, which can not, by drainage or otherwise, be rendered dry, are unfit for the growth of the grape; depth and dryness must be regarded as axioms in grape culture. If we were compelled to choose between a stiff clay and a light sand, we should take the latter, as being the least expensive and troublesome to ameliorate and put in suitable condition for the production of good grapes. A stiff clay, unless well drained, is very wet and cold during heavy rains, and dry and baked during a drought. A light soil, deeply worked, and incorporated with proper materials, seldom exhibits either extreme. Columbia county, with its heavy clay, is parched up before the light soils of Long Island begin to feel the effects of a drought. It will be readily seen, therefore, why a light soil is better for the grape than a heavy one, a somewhat uniform temperature being essential to the successful cultivation of even our robust native vines. It is the sudden and extreme changes of our climate which make it impossible to grow here the varieties of *Vitis vinifera*, none of which are constitutionally fitted to withstand the vicissitudes of our changeable climate, and the effect of which is chiefly seen in the form of mildew and rot. A heavy clay may be ameliorated by the addition of sand, just as a light sand may be ameliorated by the addition of clay; but the operation is expensive and laborious, unless the material is near at hand. There is nothing, however, of equal value to muck for improving the condition of a sandy soil, if, indeed, there be any thing more valuable to add to any soil not already rich in vegetable matter. What heavy clays need first and most, however, is thorough under-draining; and we do not believe that a permanent and good vineyard can be made on such soil without it. The addition of sand and other matters to lighten its texture will form valuable accessories, but it can not be brought within our conditions until all surplus moisture shall have been got rid of. A stony soil is not in itself objectionable, only in so far as it is troublesome to cultivate and keep clean. Such soils often make the best vineyards when properly prepared.

Some allusion may be made to the mineral constituents of the soil. It is supposed that a limestone formation is peculiarly favorable to the production of the best grapes; the remark, indeed, will hold good of all fruits. The presence of lime in the soil is indispensable. Quartz and granite soils are also good, and lava districts are famous for producing grapes of peculiar excellence. But the geological aspect of the subject may very well be dispensed with for the present, with the simple remark, that no other fruit-producing plant will grow in such a diversity of soils as the grape, though, of course, as already remarked, some soils are decidedly better than others, especially where fruit of the best quality is desired.

But we have filled up our allotted space, and not one word has been said about the preparation of the soil. We must make it the subject of our next article.

HYBRIDIZING.

BY ANDREW S. FULLER.

THE word hybrid, when correctly used, is only applied to the offspring of a mixture of two species. For instance, if we should take the native strawberry (*Fragaria Virginiana*) and the English strawberry (*Fragaria vesca*), and, by fertilizing one with the other, produce a plant with the characteristics of both parents combined, we would then have a proper hybrid. But if we take the Hovey strawberry and fertilize it with the Wilson, the result would only be a cross between two varieties of the same species.

This we hold to be the correct view of the case; but custom, which sometimes becomes law, has broken down this barrier, and we now call a seedling plant a hybrid, whether it be the mixture of two varieties or two species. This is to be regretted, as true hybrids are forced productions, and not natural; consequently they are very rare—so much so that we have often thought that it could be said with propriety, that *species* do not intermingle; and the few cases that we have on record of their having done so might be called exceptions, which are said to be necessary to every rule.

Plants in a state of nature perpetuate their species and varieties with great uniformity of character. Yet a slight change is very often observed, and it has been upon these variations that pomologists and florists have mainly depended as the starting point from which they produce their innumerable varieties.

The effects produced by change of soil and climate upon plants, when removed from their native habitat, have long been observed, and these variations turned to valuable account. Although these changes have been slow, yet, by the aid of science and the preservation of them, we are indebted for most of the valuable fruits and flowers in cultivation.

When plants are removed from one country to another, and become acclimated, the effect of this change will sometimes show itself in the seedlings grown from them, in a distinct and wonderful manner—so much so, that we are often inclined to think that it is the result of accidental hybridization.

This leads many to believe that they have a hybrid variety, when it is only a variation produced by natural causes.

If we have a variety of fruit which produces its kind without variation, it is not positive proof that it is a distinct species; but it only goes to show that the natural forces of the plant are perfectly balanced.

When there has been a displacement of these forces, either by hybridization or cultivation, and the functions of generation have been disarranged, then variation begins, and the effects of hybridization are the more difficult to determine.

Suppose we fertilize the Isabella grape with the Sweetwater, and the result is a white variety, would the simple fact of its being white be a proof that the operation had been successful? No, not at all; for there have been plenty of white varieties produced from the Isabella, without its being brought in contact with any white kind.

To convince us that hybridization has actually taken place, we would want to see some of the prominent characteristics of both parents intermingled in the offspring.

Again: if the offspring should appear to be only a reproduction of the mother plant without variation, it would not prove that hybridization had not taken

place; but it would only show that there was a prepotent power in the Isabella to reproduce itself, and the influence which the artificial fertilizing had produced was entirely hidden in the present generation of seedlings. But in the next generation it might show itself distinctly without any effort on our part to bring about such a result.

A good plan of determining whether a plant is a true hybrid or a mixture of two species, is to plant a quantity of its seeds; a portion of the seedlings thus produced will be pretty sure to show some of the characteristics of the original varieties; or, in other words, the mixture will again separate, and a part will breed back each to its original progenitor.

The Allen's Hybrid grape is said to be a hybrid between the *Vitis labrusca* and the *Vitis vinifera*, two distinct species. By growing a quantity of seedlings from it, we hope to prove that this is a fact; and if our position is correct, we will find a portion of them showing more of the *Vitis vinifera* form than their parent, while others will show more of the *Vitis labrusca* character.

These difficulties which we have mentioned of determining the cause that may have produced a certain change, ought not to check us in our efforts in hybridizing. The world cares but little how a thing is produced, or where it is from, for the people are interested only in the results.

Our greatest danger lies in the fact that partial success will often direct our thoughts into a region of false theories, from which it is difficult to extricate ourselves without unlearning all that we have previously learned.

In all our efforts at hybridizing, the adaptation of the plants to the circumstances under which they are to be grown should engage our attention.

If it is our object to produce a plant for this latitude, we should avoid, if possible, crossing with a plant that is tender or otherwise unsuitable.

The aim in all of our operations should be to develop those qualities that are valuable, and discourage those that are not, for their intercrossings will often produce an individual variety more valuable to us than either of the parents.

Again, you may take two superior varieties and cross them, and the result will be a kind that is very inferior.

It is this uncertainty that makes the operation of hybridizing plants so fascinating. If we could see exactly what the results of our labor would be, it would rob it of half of its charms.

When Lady Holland introduced the dahlia into England, in 1804, suppose some enterprising artist had undertaken to make a picture of what it would be in 1861, how near, think you, would he have approached it? He might have taken the rose, tulip, hollyhock, or any other flower of his day, and from these he might have pictured its future; but he would have never dreamed that the insignificant single dahlia before him would become, in so short a time, a flower the form of which is a true mathematical figure.

We have much at the present time to stimulate us to make extra exertions to produce new varieties of fruits. The desirable qualities of our fruits are distributed among too many varieties; and what we want now is, to bring these together and concentrate them in a less number.

We want the large size of the Union Village grape, the color of the Anna, and the rich vinous quality and hardy nature of the Delaware combined in one vine. The man who will produce such a variety (and it is possible to do it) will do his country a great favor, besides making a fortune for himself.

We want a pear as good as the Seckel, and as large as the Duchess d'Angouleme. A Gravenstein apple that will keep at least three months longer, and not

lose its flavor. A currant as large as the cherry, and as sweet as a raspberry. In fact, our wants are too numerous to mention.

Among the great perfections we have too many imperfections, and it remains with us to say whether these shall be multiplied or reduced.

There are a thousand chances that we shall descend in the scale to one that we will ascend, when we undertake to raise a new variety from seed; but that one chance was the foundation on which Knight, Van Mons, Vilmorin, and many others depended for their success when they produced the many fine fruits and flowers that we are now enjoying.

We hope every one who cultivates a fruit or flower will make an effort, the coming season, to produce some new and valuable variety by hybridization.

The seedling strawberries that I showed last year were the results of very careful hybridization, and the result was that nine-tenths of the number were of fine size, as good as the original, but only one in a hundred is of superior flavor.

[The above paper was read before the American Institute. Something to the same purpose was intended for these pages; but as this is so well done, we adopt it readily for the other. It deserves a careful perusal, and we hope will draw attention to a subject too much neglected among us.—Ed.]

NOTES ON THE CENTRAL PARK.

BY VIATOR.

As you talk to your readers through the medium of the HORTICULTURIST from month to month, it is natural that they should feel at times a desire to ask some questions, make suggestions, or at least to acknowledge their satisfaction or approval of what you say upon such subjects as are of particular interest to them. With some such feeling as this I have taken up my pen for the purpose of thanking you for the series of articles you are giving your readers in relation to the Central Park.

I have read these articles with much interest, not only so far as they have reference to this particular work, but as they are applicable to the arrangement and working of other ornamental grounds. Every person who has given any considerable attention to this subject, must feel that just such strictures as you have made are highly practical, and much needed in most works of this kind all over our country.

It is expecting, perhaps, too much from the managers of the Central Park to suppose that they will give an example of arrangement, planting, and ornament, the best possible in all respects. Yet this should be their aim; and any hints or suggestions, pointing out material errors or defects which may exist, should be noticed and corrected before the work has so far progressed as to render this much more difficult than it would be at the present time.

A work like this, destined to be an example for other similar works in this country, and which, in some of its features, will be largely copied by those who have grounds of smaller extent, should be an example in every respect of the highest and most finished style of Landscape Gardening—perfect, so far as possible, in all its details.

With the means placed at the disposal of those having this undertaking in charge, the public will hardly be satisfied with any thing less than the best work that the best talent of this country can supply.

The example you have referred to, that of Mr. Kelly, at Rhinebeck, as an example of grouping, of its kind, is quite unexceptionable, only lacking—if in any thing—in the element of evergreens to give a little more variety to the various groups; but of this I am somewhat in doubt. As seen on a bright and sunny day in August or September, one can scarcely imagine a more lovely scene than that presented by the fine lawns and beautiful grouping of trees upon this place.

Where the surface is more uneven and rough, as at the Central Park, evergreens could be used to a much greater extent, and be made effective.

The lawns at Mr. Sargent's, at Fishkill, show to what perfection this particular and necessary branch of Landscape Gardening is capable of being carried; and while we approve of the closest approximation to this example which may be available, yet we think that in a ground so large as the Central Park, the three-day system of clipping the lawns will hardly be looked for, unless in certain highly cultivated parts of it. It occurred to me that the splendid old trees at Montgomery Place, at Barrytown, would be a good example of what some of the trees now planted in the Central Park, at the distance of six or eight feet apart, might become in time, and also as showing what might hereafter be their appearance upon some of the smaller plots, as now planted.

At this place, also, are fine examples of what can be done in grouping together the different families of trees, and those that are similar in foliage. We somewhat doubt, however, the possibility of giving all the variety required in such grounds as the Central Park, by a close adherence to this rule. While making these general remarks in reference to the Central Park, I will give you the result of some of the impressions made upon me while visiting there in July last, and of which I made notes at the time—even at the risk of repeating several things you have already noticed. I went there, as others do, expecting to find an example of the highest excellence in the art of Landscape Gardening, and it was with a feeling of great satisfaction, almost immediately upon entering the grounds, that I noticed what then, and afterward seemed to be some of the best features of the work yet done in the Park. In the smoothness and finish of the surface grading, the easy and natural rolling grades, the absence of flat surfaces and depressions in the plots, it exhibits a pleasing adaptation to the requirements of the ground, while the deep covering of broken stone upon the roadways shows a thorough preparation of the foundation for securing good roads and walks. The sunken crossings is a happy thought, and, if well carried out, will be not only a great convenience, but an effective feature in the appearance of the Park.

The attempts at planting along the Mall with large Elm trees is a sore feature in this part of the Park, and the idea of ever realizing from them even passable specimens of good trees seemed to me perfectly hopeless.

A few specimens of the English Elm that were planted in their vicinity were now more thrifty, and promise far better for the future, than any portion of those miserable and mutilated examples of one of our most noble forest trees.

The elaborate stone work at the termination of the Mall near the lake, although not fully comprehended, seemed to contemplate a large expenditure of money to produce a very doubtful effect; and, indeed, the straight and stiff lines of the Mall itself do not well harmonize with the graceful and easy curves of the roads in other portions of the Park.

The crowded style of planting large growing trees within a few feet of the roads and walks, and of each other, is suggestive of much work in removal, and a failure of producing in future a satisfactory arrangement of grouping. In the multiplication and repetition of similar groups along the roads and walks there is a want of adaptation to the requirements of a ground so diversified in its character.

The elements of variety and expression do not appear to be well worked out. A greater variety in the style of the bridges and other structures, and of the material employed in their construction, might be used with advantage. The surface of the ground is too much crowded with trees and shrubs, while there is a want of well-defined groups, suitably located, and properly connected by single trees, with wide stretches of open lawn.

Another feature in the planting that appeared faulty is, that the central parts are too much crowded, and the boundary planting is too thin and sparse, and does not sufficiently conceal the outer lines of the Park. Here it would seem proper to make the planting closer, and, by concealing the boundaries in some measure, to give more apparent breadth and extent to the Park.

The quality of the trees as good specimens of their kind, is, in many of them, not what it should be. As a permanent tree, no inferior specimen should be allowed to be planted upon these grounds.

A common fault in American attempts at Landscape Gardening is the close planting, and the contracted arrangement of the roads and walks, giving our grounds a crowded appearance, and making one feel, while visiting them, as if shut in and imprisoned. There is a want of breadth and freeness essential to the idea of a pleasure resort.

My visit was made at the close of a long dry time, the after part of the day closing with a severe shower, the first for several weeks previous. This showed, as I thought, two prominent defects. While the work upon the foundations of the roads and walks is very thorough and perfect, the covering material and shape of them are far from being what they should be. The material used for covering them either slacks and decomposes, or is so soft that it becomes finely pulverized by use, and the dust collects upon them to such an extent, that in a dry time it is exceedingly unpleasant walking upon those most in use, and when the wind blows the dust is carried over the grass upon the adjacent lawns, so as to entirely destroy their effect.

The roads being flat on their surface, the dust necessarily accumulates and remains upon them, rendering them muddy, and allowing the water to stand upon the surface on some portions of the roads and walks during severe rains. If the surface of these roads and walks were sufficiently rounding to carry off the water speedily to the sides, and they were well drained, it would, in some measure, remedy these evils by disposing of the surface water, and also, to some extent, wash off the dust that now accumulates upon them. But probably a better covering material will be necessary before the roads will show that degree of perfection the work demands.

Where there are steep grades I observed the water in several instances running down the middle of the walks. A remedy here applied, that of paving the gutters at the sides, produces any thing but an agreeable effect, and with a proper construction of the walks (with sufficient side-drains) might be dispensed with. The almost universal desire to finish the working and planting of ornamental grounds in the least possible time, and the expectation of securing a speedy effect, lead constantly to errors. Traces of this kind of work are not unfrequent in almost all our best places.

While our periodicals furnish us with many well-compiled articles upon the general subject of Landscape Gardening, much of a more practical nature is omitted. What is greatly needed is well-prepared communications, pointing out what is defective, and how that which is erroneous in our present practice may be remedied.

It is in this light we look at the several articles you have recently given us upon the subject of the Central Park, and which, we trust, may still be followed by more of like character.

[The above, from a gentleman of intelligence and refined taste, and thoroughly familiar with the subject, is peculiarly acceptable. We shall from time to time publish other communications to the same effect. Viator's article is a fine example of what we have tried to impress upon our readers, that just criticism and courtesy are by no means incompatible. You are right, Viator; we love to be brought into communion with our readers just in the way you indicate. We like to feel that we have established something like a bond of sympathy with them. In our articles on the Central Park we have pointed out some grave errors, solely with the view that they might be corrected as far as possible, and at least avoided for the future. We have thought, too, that in pointing out errors in the composition of the Central Park, we might do something to prevent their repetition elsewhere; and we have the satisfaction of knowing that in this we have in some measure succeeded. How far the Commissioners of the Central Park will avail themselves of such well-meant offices remains to be seen. It is because they have ample means that we look for grand results. Viator's criticisms are well conceived, and to the point. We agree with you, that in portions of Mr. Kelly's grounds there is a deficiency of evergreens, but he seems to have been governed by a desire to avoid the common error of overdoing the subject; in this he has erred on the right side, and has at least secured an effective and beautiful simplicity.—We hope to give you soon our ideas of the Central Park lawns. The "three-day system" ought to obtain in certain parts, and, as you suggest, would be desirable in all; but we should be satisfied with something less than this.—What a sight it would be to see the grand old trees of Montgomery Place removed bodily to the Central Park Mall! In order, however, to get rid of the mutilated Elms that now disfigure it, we could almost be content to see no trees at all there. A little more such planting on the Mall would justly win for it the appellation of *Via Dolorosa*.—Groups of similar foliage can, to a certain extent, be made pretty and effective; but beyond that it demands a sacrifice which we are loth to make. The Mall and the circles at the end of it would alone form the subject of an article. We agree with you in all you say of the crowded planting and grouping; they are very defective. The *quality* of the trees we have made the subject of an article soon to appear: many of them should find their way to the wood-pile. In short, we commend the criticisms of Viator to the serious consideration of the Central Park Commissioners. They are well and kindly said, and should receive the attention they deserve.—ED.]



THE VERBENA.—HONOR TO WHOM HONOR IS DUE.

BY PETER HENDERSON, JERSEY CITY, N. J.

MR. EDITOR:—In your January number there is a communication from Mr. Pentland on the Verbena, in which he takes the ground that we are carried away from the demerits of the imported varieties by their high-sounding ducal or lordly names. Mr. Editor, this is a libel on the good sense of our fraternity, that I am surprised to see you, to some extent, endorse.

Let us look at the matter. I suppose there have been as many “native” seedlings “sent out” as there have been foreign varieties imported. Now what are the relative proportions of each that has survived the test of merit? I grow upwards of a hundred varieties, the best of all I can find, old or new, native or foreign, and yet I find that at least three-fourths of them are the imported varieties; and this I believe is a fair average of the proportion grown of each by all florists of any extent in the country. Even Mr. Pentland’s collection is no exception to this rule, for in his catalogue, now before me, in forty-two varieties there described, *thirty of them are foreign varieties*, and yet this collection, he says, is “unparalleled by any in the country.” Now, if this is so, why this ungrateful tirade against John Bull & Co.? or how does Mr. Pentland reconcile the opinions given in his catalogue with those in his published letter?

But to recur again to the seedlings. I believe, with Mr. P., that there is no reason why we should always be dependent on England for our new varieties; but he may rest assured we will until we produce American varieties to equal or excel them, which he has given no tangible evidence to show we have done as yet.

Mr. Pentland, in alluding to some fine seedlings he saw, says, “We know that a seedling Verbena never shows its best qualities the first season.” I am sorry to have to differ from him entirely in this view, having ever imagined the reverse to be “well known,” and that most gardeners of experience believe that we have ever a more healthy growth from a seed than from a cutting or layer, in plants of any kind; and also, that that very circumstance makes us too often deceive ourselves and the public, by inducing us to send out the offspring of a promising seedling, that, when less vigorously grown from a cutting, is comparatively worthless.

Last summer, from my importations, I saved about forty varieties of Verbenas, flowered them, and found about one-third of them no better than others of the same styles we already possessed; the others I retained as being superior to any thing I had, out of a bed of nearly three thousand seedlings, from as carefully collected seed as I could find. The seedlings made a splendid show, as they always do—much more so than the named varieties alongside—but were deficient in *substance* and *marking*, which were the characteristics of the imported sorts. Now this, I think, can only be accounted for by supposing that in England they are more careful in choosing their seed, and, from growing them in much larger quantities, have a larger field to select from; for unquestionably our climate is better fitted for producing seeds, and consequently varieties, if we only gave the matter the same care. There is no denying, that to them we are indebted for all the leading styles of Verbena, of which *Géant des Battailles*, *Rosy Gem*, *Leviathan*, *Mrs. Holford*, *Alice*, *Maonetti*, *Gondolier*, *Gen. Simpson*, *Topsy*, *Mrs. Woodruff*, *Madame Abolt*, and *Victory*, form a dozen which, I believe, we have no dozen of American varieties to equal, although the above are from three to twelve years

introduced. To be sure we have two American varieties perhaps superior to any of them, namely, "Mrs. Field" and "Mrs. McKay;" but as these are both Jersey seedlings, some of your facetious readers might insinuate that these also are "foreign" varieties.

But what is true of Verbenas is equally true of all the leading florist's flowers, Roses, Dahlias, Chrysanthemums, Fuchsias, Geraniums, etc., in all of which for the wonderful improvements for the past few years we are almost entirely indebted to the English and French growers. No doubt we are often enough humbugged, but there is always sufficient wheat among the chaff to induce even the most knowing birds to try again.

So, Mr. Editor, I think, before we arrogate to ourselves a superiority or even an equality in seedling raising with our cousins across the water, we must turn a new leaf; we must have some central Horticultural Society offering respectable inducements for seedlings of merit, where the claims of our "bantlings" will be decided upon by competent and disinterested judges, and not by the partial eye of the raiser or his well-meaning friends. Until such is the case, and publication thereof be made by the Horticultural journals, our seedlings at most can only have a local reputation.

[The above was received a couple of days after Mr. Veitch's article, but we deemed it best to give one at a time. A part of our remarks to Mr. Veitch's article will apply to this. In regard to the "libel" which we are said to have "endorsed," we have only to say, that we simply affirmed a fact, which Mr. Henderson does not and can not deny. Under the old but exploded axiom, "the greater the truth the greater the libel," we plead "guilty." The fact is, both Mr. Veitch and Mr. Henderson demonstrate the simple truth we enunciated: "we do not yet fully appreciate the merits of our own productions;" but when we come to assign reasons for this fact, there is naturally some difference of opinion. The reasons assigned by Mr. V. and Mr. H. have much to do with the matter, but there is another underlying the whole subject which acts still more powerfully. If we wished to prove our position, we should engage a berth in the next steamer for New Jersey, (Mr. H. will excuse us for being a little personal;) after landing on that "foreign shore," we should not have to walk many miles to demonstrate, that as good seedling Verbenas are raised there as in Europe, and that they are *not* as much appreciated. What, then, shall we do? stop raising seedlings? By no means. Go on raising seedlings, and at the same time import all the best European varieties. The seedling will doubtless by-and-by get a fair chance for competition. What is here said of flowers is *not* true of fruits, and for a very similar reason. We desire to see the public mind in such a healthy condition, horticulturally speaking, that no seedling or novelty, either fruit or flower, would be bought until properly endorsed by some competent authority. But we do not purpose "arguing" this subject at present; it is in good hands, and the real facts will, in the end, no doubt be assigned their true position.—ED.]



GRAFTING THE GRAPE.

BY EL MEDICO.

THE February HORTICULTURIST honors me with a question which I must have the politeness to answer, although I have nothing original or interesting, as yet, to say on the subject of grape-grafting. You ask, whether it is desirable to have that operation illustrated by cuts. My answer is, yes, by all means; and so, I think, would nineteen out of twenty of your readers say, if they had only the chance to cast their ballots. Let us have the pictures; I am still very fond of them, although all my hair is not precisely of the same color it once was. They aid the apprehension, and are the next best thing to seeing the operation itself. Verbal descriptions of any process, however minute they may be, often convey different ideas to different minds. This a good drawing can not do. You have still time to set us all to work, in the spring, in the right way.

I have the pleasure of Dr. Grant's acquaintance, and for that reason his article in your last number was read with more than ordinary satisfaction. His views of the principles of grape-grafting had all been suggested to my mind before. They are undoubtedly true, and proceed from a correct understanding of vegetable physiology. But the clearest knowledge of the principles of a science may be attended with defective practice; and, of all who would be grafters, only a favored few will be masters of the theory. What the great mass of horticulturists need is the knowledge of a simple, practical method of grafting, always attended with such an amount of success as will encourage them to risk an operation on a good vine in order to get a better. That is what all intelligent farmers are constantly doing with their apples and pears; and nothing more than what they would as surely do with their grapes, if they knew how. And to teach them to do it is the quickest and surest way to educate their palates, and convert them into eager purchasers of better kinds, on their own roots, from those who have them to dispose of.

Dr. Grant mixes encouragement with discouragement very accurately—" 'al' and 'al'." He tells us how to do a good thing, and then tells us not to do it. I feel like drawing my rusty scalpel upon him for filling me with zeal and hope in the first place, and then, while the ground is covered with snow, giving me a shower-bath of every cold water. My system feels, as yet, but a feeble reaction, and I fear the glow of vigorous health will not fully return after such thorough hydropathic treatment. I had hoped the doctor was a regular practitioner, like myself, and loved to administer cordials and placebos. The sum of his objections to grafting is, that a grafted vine is not as durable, as one on its own roots. Admitted: and will not the same objection apply to an old apple or pear-tree that has been grafted? His argument for a vine on its own roots is, that it takes but three years to bring it into a good bearing state. As to time, the argument is all in favor of an old vine successfully grafted, which by the operation is retarded but one year. A gain of two years is a great gain to all men, who know that "man that is born of woman" is at least "of few days," if happily not "full of trouble." And how much greater still is the gain to him whose table is surrounded with little grape-hungry mouths, whose impatience seems to augment the interval between beef-soup and Delaware Grapes into an eternity.

Let us suppose another very common case: A suburban resident has a row of

Isbellas in his very small garden. He knows that to take them up, and trench, and enrich the border for a new kind and generation of grapes is an expensive operation. But that is not the worst of it, by a great deal. He knows that even should the tender roots of young vines take well in ground before occupied by grapes, he must wait three years before he can fill his fruit-basket with un-bought grapes, unless by paying a "fancy" price he buys large layers, and then he may reduce his term of expectancy (or "hope deferred") to two years.

Again : A man has a vineyard of one acre, which supplies himself and family abundantly with wine and fruit, and yields a handsome profit besides. To trench and set it in vines it originally cost him \$300 in money, and three years of impatient expectation, not unattended with less than \$— in toil of hand and sweat of brow. He is 50 years old, but not without ambition. His Isbellas mildew, are uncertain, and of slow sale in the market. He wants his acre in better vines. The idea of extirpating, retrenching, replanting, and beginning *de novo*, is out of the question. What then ? Why, he will graft the vines as fast as his limited means will enable him to obtain the eyes. And that is what those who understand it are now doing at Cincinnati. True, the vines may not last more than fifty, or forty, or twenty, or even ten years ; but that's enough.

And thus, I might present many other supposed cases, to show the very great importance of the art of grafting the grape.

A very extensive dealer in grape-vines, of Rochester, N. Y., (vide *Gardener's Monthly*,) propagates the vine very largely by grafting a single eye upon a root not more than two inches long. The plants are ready for market the succeeding fall ; and, I presume, are twice as large and vigorous as they would have been unassisted by the root. The idea is plausible in theory, and will doubtless be eminently successful in practice. I am inclined to think that all feeble growers should be grown in that way. The Rebecca, for example, (one of the best of grapes,) is comparatively worthless on its own roots, from sheer attenuation and debility. I have seen but one vine whose annual crop would detain a five-year-old boy from his play more than five minutes. When grafted I have seen them grow with sufficient vigor. One more suggestion in this connection, and I have done, viz : to use "Longworth's Great Grower" as an invariable stock upon which to propagate all feeble growers. I saw this vine in Mr. Longworth's garden, and was amazed at the luxuriance of its growth. I would describe the monster, if I thought your confidence in me could stand such a test ; but as I do not wish you to take me for a veritable descendant of Baron Munchausen, I will hold my pen, and merely add that Mr. Longworth has himself described the vine, in a letter to the Cincinnati Horticultural Society, which may have been published in their proceedings.

[We extend you a hearty greeting, El Medico. You may at times wield a "rusty scalpel," but always a polished pen. Your "chapter of failures" has already awakened a wide-spread sympathy, in which we hope you and many of our readers have found some comfort. We gather from this that a large number of individuals are in want of just such knowledge as you called for, and that in this respect you are emphatically a "representative man." We have prepared the illustrations and placed them in the engraver's hands, and if finished in time you shall have them in the present number. The root grafting you allude to is now common among propagators, but is not what you want ; we shall explain it, however. Mr. Longworth's "Great Grower" we presume is the one, the fruit of which he sent us some four or five years since.—Ed.]

THE PRACTICAL PAPERS.—I. HOW TO SET OUT A TREE.

BY OLAPOD QUILL, (AN OLD CONTRIBUTOR.)

As the season of the year so favorable to the transplanting of trees is drawing near, a few practical hints derived from *experimental theory* may not be without profit to the interested. We frequently have the inquiry made of us by our friends, "How do you transplant a tree to make it live?" Now, in the first place, it is very easy indeed to make a tree live, if you understand how to do it. Many persons imagine that there is but little difference between planting a tree or a stake, until they are taught two or three lessons of disappointment. A case in point will show the necessity of a knowledge of the work to be indispensable, to insure complete success. A farmer, not more than thirty miles from Boston, had an orchard to plant out with trees, and, wishing to have them live and thrive well, he employed the services of an experienced gardener to transplant his trees.

Very well: the gardener set out on the first day eight or ten trees only out of the one hundred to be planted. The owner of the trees was sadly disappointed at nightfall in finding "but ten trees out of the lot set out," and more so at the price asked by the gardener (two dollars per day) for his work. He "paid him off," and concluded he and Jonathan, his hired man, would set out the rest. He did so, and mark the result. Ten years afterward the same man was at work in the same field, when a gentleman riding past stopped to examine the trees. After attentively looking at them for a few moments, he asked of the owner why he did not plant out his whole field at the time he did the row of trees at the wall, all the others in the orchard being of a small, dwarfish appearance. His answer was, "They were all planted at the same time; but I hired a gardener to plant out these ten, which are so large, and the rest I put out myself, because I thought he was too slow, and charged too much; but if I had given him two dollars a day for ten days, I should have richly received the benefit, for of these ten trees any one of them would have more than repaid the whole expense." The looker-on smiled as he observed, "I am the gardener who set them out for you, and I thought you would find, sooner or later, that it required more knowledge to plant out an apple-tree than it did to set out a post."

The following simple rules have been successfully followed by myself for quite a number of years, and I think can be adhered to with a good degree of certainty as to favorable results.

First, the hole destined to receive the tree should be made (for a small tree, say from one inch to one-half inch diameter) three feet in diameter, or sufficiently broad in all cases to receive, without cramming or bending, all the rootlets of the tree. Next, place the tree in the same position as when removed, but not too deep. Many inexperienced persons lose their trees from too *deep setting*. A tree when transplanted should set *no lower* in the earth than it did in its original position before removed. If any of the branches or roots are bruised or lacerated, pare them smoothly, or shorten them with a sharp knife. Use good compost as a manure in setting out, and fill in the finely pulverized mould closely about the roots. To make sure there is no hollow about the roots, it is best to use the hand to introduce the fine earth round the small "fibre roots," gently shaking the tree until it becomes quite firm of itself. Any neglect at this stage of the transplanting is an error which will be sure to be seen in the after growth of the tree.

As a general thing, I have not used *water* in transplanting trees, and do not recommend its use except when setting out a large tree; then I use water, say one pailful, when the tree is partly set out or the hole a little more than half filled with earth. I wait until the water has "dried in" or become absorbed, before filling the hole up, but never make a "*mud pudding*," by throwing in the earth immediately after the water.

In small-sized trees I prefer muck, litter, or short sedge, as a retainer of moisture, to quantities of water. I have found, by experience, that too frequent watering applied to the surface tends to harden or bake the earth, and proves injurious to the tree. In frosty locations, if you fear a lifting of the tree, a small mound raised in the fall around the stem of the tree will remedy this evil. Remember to remove the same in the spring. In very rocky locations, it is best to dig out, say one or two cart-loads of the soil, and remove it, filling its place with rich garden mould; and our word for it, you will be the gainer thereby. By attending carefully to the above general hints, you can have not only a pleasant shade tree, but a profitable bearer; and if so, you will be of our mind, so far as fruit trees are concerned, that when the tree is *transplanted well* "it is *DONE*, if well done;" if not, why you will soon find it out.

[In our friend "Quill" we welcome back to the HORTICULTURIST one who often wrote for it in the time of Mr. Downing. His articles, as indicated by the title, will be entirely practical, and correspondingly valuable.—Ed.]

WATER CRESS.

BY BROOKLYN.

THIS salad is easily raised wherever there is a well or pump. Take seven flooring boards, and make a tank four feet wide and one deep; pitch the seams, and sink in the earth; fill with good soil, and set plants. Run in all spilt water.

I have raised it in this way for three years, a bed of the above size furnishing an ample supply. The last two years I sashed it, and cut from 1st of May until the middle of December. It should have a warm aspect, to get it in bearing early, but is better shaded by an arbor of beans, squash, etc., in July and August, or the sun is apt to cook it.

["Brooklyn" has a peculiarly practical mind. He wastes no blows; but hits the nail right on the head till it is driven home, and then stops. A few more light blows by way of finish would seem to be all that is needed to make every thing "right and tight." The above is a very simple and practicable mode of growing cress, and puts it within the reach of numbers who might otherwise be deprived of it. It is one of our best salads.—Ed.]



WHAT IS IT?

BY G. H. B.

MR. EDITOR:—It has been a source of much reflection to me, what the cause may be that, in all the vast tract of country from the Rocky Mountains to the Atlantic coast, the true wine grape (*Vitis vinifera*) will not grow, as it is perhaps the only plant that will accommodate itself to any climate and soil elsewhere all over the world. Even in parts where the summers are too short to ripen its fruit, the plant itself will *grow* healthy and live, which is not the case here.

Immediately west of the Rocky Mountains, in California, the vine does well, and cuttings sent there and planted in the open air have borne fruit the second season. A little south of Florida, also, at St. Croix, there is a beautiful vineyard on the mountain, which produces most delicious fruit; and a gentleman here who lived a number of years at St. Thomas, told me that he had a Chasselas Blanc there in his garden which bore annually four crops for sixteen years, after which time it was exhausted and died. Even near the equator, in a country where a pair of blackened boots will be covered with mould in thirty-six hours, I have found at Paramaribo, in the garden of Mr. Trask, the American consul, the Chasselas in a healthy state, and ripening its fruit well. But, strange to say, I had a vine of our Alexander, or Schuylkill Muscatel, as it is often called, and planted it there, which, during the rainy season, became perfectly covered with moss, and the Chasselas remained perfectly clean. The locality of both these vines was alike.

In my opinion, the cause of our non-success with the foreign grape-vine in the open air, lies in the peculiarity of our atmosphere during the summer season; it has something singularly oppressive and sultry, *even in the shade*, which we do not find elsewhere. It is our summer, not the winter, which kills the foreign grape-vine here. In California, in the West Indies, in Guiana, we find it hot in the sun, but *always pleasant in the shade*. Here is the difference; but what the real cause of the difference is, we shall not soon be able to discover.

[A mystery surrounds this subject, and that mystery gives it a peculiar interest. The results are sufficiently uniform and apparent; the cause, it must be acknowledged, is not well understood. The facts are stated correctly by Mr. B. There can be little doubt, we think, that the wine grape is constitutionally unfitted to endure the extreme and sudden changes of our climate. It is not the winter's cold or the summer's heat that proves fatal, but excessive variations of temperature. We shall have occasion soon to discuss this whole subject.—ED.]

AMERICAN SHADE TREES.—NO. II.

BY C. N. BEMENT.

THIS family of trees are highly ornamental, and their cultivation in the park, lawn, and road-side should be much extended. Whether we regard the beauty of their flowers and opening in early spring, or the red fruits in the beginning of summer, or their red and orange-colored foliage in autumn, they deserve to be highly considered, as they are, one of the most ornamental of hardy trees.

The Red Maple, called also the White Maple, the Swamp Maple, and the

Scarlet Maple, is a tree of middling size, growing abundantly in swampy low grounds, in most parts of the Middle States. "Its flowers, which appear in April or May, before the leaves, are of a bright crimson, or scarlet, and make a striking appearance in whorls or pairs, of sessile, crowned bunches, on the scarlet or purple branches. The flowers are of two or three kinds, found on different trees. The surface of the leaves is liable to be variegated with lines of scarlet, or crimson, or orange, at every season of the year. This occasionally happens to all the leaves on a tree, even in middle of summer, forming a gorgeous contrast with the green of the rest of the forest. The leaves begin to change their color in August, and are usually gone by the first of November."

The observation of a single year of the varying colors of the Red Maples, would be sufficient to disprove the common theory, that the colors of the leaves in autumn are dependent on the frosts. It is not an uncommon thing to see a single tree in a forest of maples turning to a crimson or scarlet in June or August, while all other trees remain green. It is not uncommon to see a simple brilliantly colored branch showing itself on a verdant tree; or a few scarlet leaves exhibit the tints in October, while all the rest of the tree and wood has the soft greens of June.

A Red Maple is usually a low, round-headed tree, of less beauty of shape than either of the other species. But the great variety of rich hues which it assumes, earlier in the fall than any other tree, gives it a conspicuous place in our many-colored autumnal landscape.

The Red Maple bears transplanting remarkably well, is of rapid growth, young trees increasing in diameter from a fourth to two-thirds of an inch in a single year. It may be made to grow in any soil not too dry; still it flourishes best and attains its largest size in rich swampy land.

The White Maple.—From the Red Maple, with which it is sometimes confounded, it may be easily distinguished by the silvery whiteness of the under surface of the leaves, and by the color of the spray. The flowers come out in April, before the leaves. The beauty of the finely cut foliage, the contrast between the rich green of the upper surface of the leaves and the silver color of the lower, and the magnificent spread of the limbs of the White Maple, recommend it as an ornamental lawn tree; and as such it has been extensively introduced in our lawns, parks, towns, villages, and cities.

The Rock Maple is a well-known native tree, valuable both for the production of sugar, and for its wood; its stately growth, and fine form and foliage, make it desirable as an ornamental and shade tree. It is easily distinguished from the other maples by the roundness of the notch between the lobes of the leaves, which in others is somewhat acute. This tree, which is also called Hard Maple, from the character of its wood, and Sugar Maple, from the character of its sap, is in all respects the most remarkable of the family. When young it is a beautiful, neat, and shapely tree, with a rich, full, leafy head, of a great variety of form, enlarging upward and forming a broad mass above, or tapering at each extremity and full in the middle, supported by an erect, smooth, agreeably clouded column, with a clean bark, and a cheerful appearance of vigor. In open pastures, on moist hills and mountain sides, it forms a broad pyramidal top, the branches coming out horizontally or with a graceful upward curvature from a point eight or ten feet from the ground. On the plain, in deep, moist, clayey soils, the top assumes the shape of a massive cylindrical column of great height, often seventy or eighty feet.

The leaves are bright green and smooth above, pale glaucous, and at first downy; afterwards, smooth beneath. On different trees they differ strikingly in

their color, being sometimes of a dark and sometimes of a light green on their upper surface. In autumn they become, often before the first touch of the frost, of a splendid orange or gold, sometimes of a brighter scarlet or crimson color, each tree commonly retaining, from year to year, the same color or colors, and differing somewhat from every other.

Acacia Tree.—This is a well-known American tree, better or more commonly known as the Locust. It grows very rapidly, in the early stages of its progress, so that in a few years, from seeds, plants of eight and ten feet high may be obtained. It is not uncommon to see shoots of this tree eight or ten feet high in one season. “The branches are furnished with very strong crooked thorns; the leaves are winged with eight or ten pairs of leaflets, egg-oblong, bright green, entire, and without foot-stalks. The flowers come out in the branches, in pretty long bunches, hanging down like those of the Laburnum. Each flower grows on a slender foot-stalk, smelling very sweet.” The flowers are of a white color, and it blooms in June; and when the tree is in full bloom it makes a handsome appearance, and perfumes the whole air around.

The Acacia tree seems happily adapted to ornamental planting. Whether as a single tree upon the grass, feathering to the ground line, or as a standard in the shrubbery, towering above a monotonous mass of sombre evergreens, the Acacia has great charms for us, and may justly be called a graceful tree; and although its loose, light, and pleasing foliage admits the light, and seems to harmonize so delightfully with the polished lawn, or the highly cultivated shrubbery, yet we should like much to see the Acacia tree planted in the woods wherever forest timber is an object of attention. Its shade encourages the growth of grass. The Acacia trees, in their rapidity of growth, are exceeded only by a few of the poplar and willow tribes.

The Horse Chestnut.—Botanists describe only two species of this tree in the United States, namely, the large Yellow, and Ohio Buckeye or Horse Chestnut.

The value of the American Horse Chestnut consists mainly in the beauty of its abundant, precocious, and beautiful foliage and flowers, qualities which bring it into great request as an ornamental tree. In beauty the yellow variety is considered inferior to that magnificent tree, the Ohio Horse Chestnut, which is not a native of any of the Atlantic States, where, however, it is a favorite ornamental tree. The ordinary stature of the American Horse Chestnut is ten or twelve feet, but in some situations it sometimes equals thirty or thirty-five feet in height, and twelve or fifteen inches in diameter.

The foliage of this tree appears very early in spring, being very quickly followed by its flowers, which almost cover the tree in white bunches, making a very brilliant appearance. The fruit is of the same color with that of the foreign Horse Chestnut, and about the size; it is contained in fleshy, prickly capsules, and is ripe the beginning of autumn.

The White Wood or Tulip Tree.—This tree, the only one of its genus, is found in great abundance in the Middle States, where, on the rich woodlands in the alluvials bordering on large streams, it attains a growth which makes it the most majestic tree of the American forest. Trees are frequently found from one hundred to one hundred and fifty feet in height, and six or eight feet in diameter, the trunk being sometimes sixty or eighty feet, perfectly straight, and without knot or limb. This stately, magnificent tree, when its wide-spreading branches at the summit are loaded in May with its Tulip flowers, is a splendid sight, and a most valuable acquisition.

“When this tree first bloomed in England, the common people heard that there

was an enormous American tree covered with Tulips, and they opened their eyes in wonderment at the information. It was just after the Tulip mania in Holland and elsewhere. The excitement was great, and *Liriodendron tulipifera* was all the fashion. There can scarcely be a handsomer tree, and yet it is not so frequently planted as it deserves to be." It is a good shade tree, but it attains a large size; too large for very small grounds. It is also difficult to remove, having a tap-root. Procure it not from the woods, whence it almost always fails, but from a reliable and conscientious nurseryman, whom you can believe when he tells you he has removed it at least once.

The Linden or Lime Tree.—This beautiful shade tree is more commonly known in this country by the name of Basswood. It is a lofty, rapidly-growing, handsome, upright, and regular-shaped tree; much esteemed, and well suited for planting in avenues, lawns, and parks; and is to be recommended where the object is to obtain a great mass of foliage and a deep shade. No other native tree surpasses it in the abundance of its foliage. Its head forms a fine pyramid of verdure, while its lower branches, when planted singly on a lawn, and allowed to develop itself on every side, sweep the ground, and curve upward in the most pleasing form. The pleasant odor of its flowers is an additional recommendation, as well as its free-growing and handsome leaves. The flowers are brown on long stalks, and are pendulous from the branches. It has the advantage of being easily transplanted, and growing readily in almost any soil, though it flourishes best on a rich, rather moist loam.

As an ornamental tree in picturesque gardening, the Linden is worth cultivating, as it ranks in the first class in point of magnitude, frequently attaining a height of eighty or ninety feet, and a trunk corresponding in circumference to such an altitude.

These qualities adapt it admirably for being used as a screen or as a shelter to protect tender trees against the wind. Its growth is very rapid; it bears pruning almost to any extent, and may be trained to grow as tall, or as low and bushy, as may be required.

The Hickory is also a very fine ornamental tree, that should be much more often seen about our houses and public grounds. The difficulty of transplanting it is probably the principal reason why it is not more often used for such purposes. It grows very rapidly from the seed, and a supply could very soon be obtained by planting the nuts at the places where the trees are to grow.

The Oak, the monarch and glory of our forest trees, as an ornamental tree, standing alone in a park or lawn, has few superiors. As an ornamental object we consider the oak the most varied in expression, the most beautiful, grand, majestic, and picturesque of all deciduous trees. Its beauty consists in the abundance and luxuriance of its foliage. It is beautiful in every stage of its growth; at first light, slender, delicate, and waving; at last broad, massive, and grand, but always graceful. The enormous size and the extreme old age to which it attains in a favorable situation, the great space of ground that it covers with its branches, and the strength and hardihood of the tree, all contribute to stamp it with the character of dignity and grandeur beyond any other compeer of the forest. When young, its fine foliage and its thrifty form render it a beautiful tree. But it is not until the Oak has attained considerable size that it displays its true character, and only when at an age that would terminate the existence of most other trees that it exhibits all its magnificence. When standing in a situation where it is somewhat protected, and has room freely to expand its limbs, it will in every year improve in beauty and magnificence, for a time equal at least to five of

the generations of man. There are Oaks in Britain which are believed to have been old trees at the time of William the Conqueror. The famous Charter Oak, the valued relic of the original forests, so noted in song and history, but more especially interesting as the tree in which the old British Charter of Connecticut was secreted, was supposed, at the time it was prostrated, in a storm, a few years since, to be over 2,000 years old. Proudly it stood, and, when tottering with age, and reduced to a mere shell of a few inches by the steady inroads of time itself, it still clung with fondness to the lovely spot on which it had witnessed the decay and downfall of many of its associates—the path and the bloody wars of the red man, and the red man's decay.

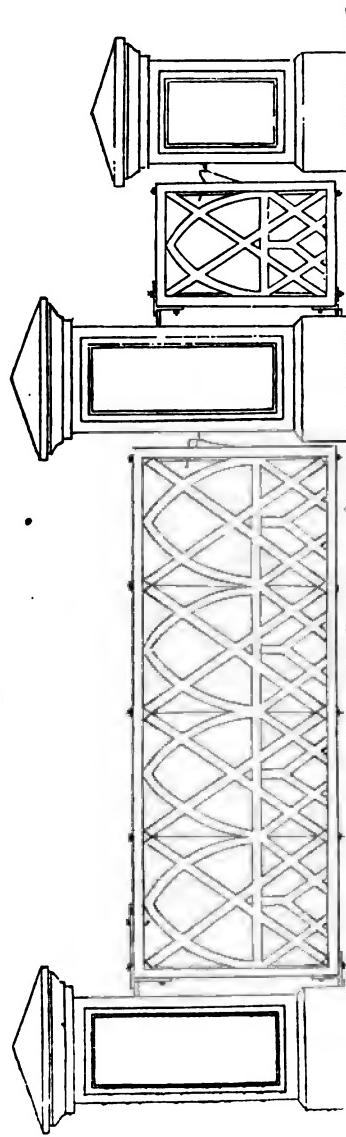
LANDSCAPE ADORNMENT.—No. X. "GATES."

BY GEO. E. WOODWARD, ARCHITECT AND LANDSCAPE GARDENER,

29 BROADWAY, NEW YORK.

THE introduction of the old and well-established principles of the truss in the design and construction of gates, is an improvement which effectually obviates all tendency to sag, and at the same time furnishes the remedy for it should such a thing occur. In roofs of great span, and in bridges, the truss is found to be the best form of construction known to resist an equal or unequal load, and its merits have been well tested. The application of a bridge truss to a gate is a suggestion of our own, no use of it ever having been made before in this manner that has come to our knowledge; and having by practical experiments ascertained the entire fitness of the truss for the construction of gates of every class, from the rustic farm gate of cedar poles, to park gates of a massive and ornamental character, we have no hesitation in stating that it presents the best united form of the three leading principles that are desirable in gate construction, viz : beauty, strength, and economy. A careless glance at the design given with this article would lead many to suppose that this principle is a common every-day matter, the use of braces and counter-braces being recognized in nearly every style of gate. As we have studied the subject of gate construction theoretically and practically, and made experimental tests of the strength and permanence of all the most approved principles in use, we speak guardedly as well as confidently when we say that the true principle of the truss is not embraced in any form of gate construction that has yet been adopted. We have had occasion to examine one or two in which some of its characteristics have been used, and they have proved to be of a superior character.

There is nothing new in the principle of the truss, and its strength is an admitted fact. In applying it in the construction of gates we adopt the best known form of strength for that purpose, and one which, in all conditions of shrinkage, decay, or abuse, embraces within itself the remedy that shall effectually overcome the objectionable results from these causes. The enormous tensile strength of iron being brought in opposition with the unyielding power of wood, has the effect of making a truss very rigid in its character. In the engraving the principle of the truss is easily traced, being two braces between each perpendicular



THE WOODWARD GATE.

iron rod, running from the lower rail to the upper rail, and crossing each other in the centre. All else is for the purpose of ornament and protection. Should the gate, from any cause whatever, sag down, it can be easily brought back by unscrewing the rods and placing a thin strip of wood or sheet lead under the foot of those braces that run forward toward the upper rail.

There are no nails required to make these gates, except to attach or secure ornamental work; no mortises are necessary but those in each corner of the gate frame. All the stuff is two by four inches, halved together, wherever they cross, and any piece can be taken out and replaced without injury to any part of the gate. The braces are all of equal length, and are got out with square ends, the bevel being made on the triangular foot block at the head and foot of each brace; they are held tightly in their place by compression, which can be controlled to the amount of several tons. No nails or mortises have any thing like the power or security.

We call particular attention to the hinge shown, and the manner of applying it, which we believe to be new. The iron bolt which passes through the gate at the heel post passes through both upper and lower hinge, and makes hinge and gate, as it were, one thing only. Three carriage-bolts in addition are all that are necessary to completely attach the hinges, and the result is a stronger and more durable hinge at half the cost of those in common use.

We believe the truss gate contains the remedy for all objections urged against the common forms. It can be constructed for about one-third less money than any other style, and is adapted equally as well for a cheap farm gate as for ornamental gates of country seats and parks.

The variety in designs afforded by first drawing the principle is almost unlimited. The truss, the double truss, single braces, interlaced braces, lattice, etc., are but different changes of the plan. In connection with these we can add designs not only peculiar to this style of gate, but designs of any character whatever can easily be adapted to it; and if desirable, the truss principle can be so woven in as not to be recognized except on close inspection. We, however, do not consider it any evidence of beauty or taste to hide the indications of strength; that gate which does not proclaim its power lacks a quality for which a graceful and well-proportioned ornament is no compensation. The most charming design is but a silly display if there is no exhibition of its usefulness.

A gate can be, and should be made, a very pretty feature in the embellishment of a country home, and in some measure should express an insight to the taste displayed in the adornment of the grounds. Its plan of construction, beauty of design, or practical utility, should attract attention in preference to elaborate workmanship, costly columns, etc.; the preference should be in this, as well as in all other departments of landscape art, to display the evidences of a refined and cultivated taste instead of the evidences of wealth, and the estimate of value should be more in proportion to beauty than cost.

The true lover of country life will discard an iron gate, not as bad taste exactly, but as inappropriate taste, it being more in keeping with the appointments of a town establishment than in the list of rural embellishments. A four story free-stone front harmonizes equally as well with the beautiful or picturesque.

We shall, in future articles, illustrate the use of the truss principle in rustic work. In this, nails are of no permanent value, and rustic gates, fences, seats, etc., tumble to pieces as soon as they get thoroughly seasoned. The iron bolts in a truss, which add but a trifle to first cost over nails, render rustic work in that form as durable as the materials of which they are composed.

We invite the gate-building community to make free use of the hint here given; our reward is sufficient to know that in this new application of an old principle, there is a successful illustration of science and economy.

[We can not forego the pleasure of adding a word of approval in regard to these gates. They combine the elements of simplicity, strength, and beauty in an eminent degree. The principle is susceptible of so many styles of ornamentation, that it may be adapted to any kind of architecture. This Mr. Woodward will illustrate in succeeding articles. Did it ever occur to you, Mr. Woodward, that a good stiff, durable ornamental fence might be got up in the same way?—ED.]

THE ROSE-SLUG AGAIN.

BY AN OLD STANDARD.

DEAR EDITOR:—I have just noticed an article in your February number, recommending water, "mechanically applied," as a remedy for the Rose-Slug, and which you nail with scripture as being a remedy "without money and without price." Of course you refer to the water portion, overlooking the expense of a "box mounted on a four-wheeled carriage, and a force-pump attached, with rubber hose eight or ten feet in length."

I have great faith in water as well as in Veitch, who is a man of large practical experience, and I would be the last in the world to throw cold water on any suggestion of his; but as these said appliances may not be easily procurable by many who delight in cultivating the Queen of Summer on a small scale, like myself, and knowing that you can not have too many *effectual* remedies suitable to the various means and necessities of your numerous readers, I beg to suggest *another*, which to you and the profession generally can not be *new*, but which may be of service to some of my own class—amateurs.

There is no doubt as to the good effect of water applied as directed by friend Veitch, but with the necessary accompaniments it is *not cheap*, to say nothing of two persons being necessary to work it. "Gishurst Compound" is also good and effectual, and also *not cheap*; "on the contrary, quite the reverse," as well as dangerous if injudiciously applied.

My remedy is neither dear nor dangerous; is easily and quickly applied, a few applications only being sufficient; whereas, the water-system is a tri-weekly labor of two months' duration.

Your inquiring correspondent of last year says, "Tobacco, and smoke, and sulphur, and lime, and plaster, and woman's tears, and men's imprecations are alike harmless to exorcise those miscreants which plague mankind;" but, I ask, in what shape or form was tobacco used? Certainly not in that of *snuff*, *my simple remedy, which I have never found to fail*. Not such as is sold by tobaccoconists to those who are led by the nose, but the *refuse* or sweepings of the snuff-mill: equally pungent it is, and much cheaper. For twenty-five cents I buy from Lorillard more than sufficient for a season, and I grow about a hundred plants. I use a common dredger or pepper-box, about three inches in diameter, giving the first dusting, just enough to slightly color the foliage, as it opens, and always early in

the morning when *bathed in dew*. Unlike water, it remains, keeping guard against the enemy till washed off by heavy dew or rain, when it may be repeated.

From the first application till the flower-buds begin to burst—when it becomes no longer needful—I am outside the mark when I say that I have not applied it over six times any one season; *four*, I believe, being nearer the truth. So you see the trouble is little, the expense trifling, and the result all that can be desired.

Whatever the *pest* may be, slug, thrip, or red spider, that so utterly destroys the foliage, and consequently the bloom, I know not; but, be it either or all of them, I now consider the evil perfectly under control—the victory complete.

There is, however, still another enemy to look after. Notwithstanding these pungent dustings, I have, but only in very few instances, found "*a worm in the bud*." Whether it is that I had missed dusting the bud attacked, or that the caterpillar—for such it is—can stomach the weed, deponent saith not. I only state the fact to show the need for keeping an eye on the buds.

To those who adopt this remedy I promise healthy plants throughout the season, being fully confident of the enemy beating a hasty retreat the moment you are found to be "*up to snuff*."

[“Of course,” Mr. Standard, we only referred to the price of the remedy itself, leaving each one to count the cost of applying it. Not a few already have the box and hose, and to such the application would be cheap enough. But that does not in the least detract from the merit and cheapness of your remedy, which we can well conceive to be a first-rate one; indeed, we know it to be so; but how many will apply it *before* the slug has put its mark on each individual leaf? Watch the first appearance of the enemy, and take him, like time, by the forelock.—Ed.]

PROPAGATION OF THE GRAPE-VINE FROM CUTTINGS OF GREEN YOUNG SHOOTS.

BY HORTICOLA.

MR. FERDINAND RUBENS, the author of a very valuable work on the Grape-vine, referred to by Dr. C. W. Grant in the fourth edition of his catalogue, communicates to a friend of his in this country the observation made by *Rev. Mr. Rank*, of Alexandria, in Poland, that cuttings taken from the vine towards the end of June, grow very readily. As this observation is sufficiently interesting to those engaged in the culture of the vine, we translate from *Mr. Rubens's* letter the following extract:

“In the middle of September I received a letter from *Rev. Mr. Rank*, at Alexandria, in Poland. As that letter will interest you, I transcribe a part of it. He says, ‘Toward the twentieth of June, just before I set out for a watering-place, I transplanted a number of grape-vines with perfect success, so that the truth of your assertion, that this may safely be done in summer, was fully proved. I made, besides, the discovery not mentioned in your book, that cuttings from young green shoots, when carefully planted and treated, grow very readily. In transplanting the old vines, I collected the young shoots, which were about three feet long, and planted them in holes two feet deep, cutting off about six inches from their tops, and watered them liberally. The leaves, of course, had been removed,

and they were planted so deep, that two eyes only remained above ground. About a week after planting they commenced growing. Not a single one out of fifty which I planted has failed."

It happens not unfrequently during the summer, that young, vigorous shoots are damaged or broken off by violent winds or other accidents; they may be used for propagation instead of being thrown away.

[The above, from a distinguished scholar, as well as an experienced amateur horticulturist, will be read with peculiar interest. Many years ago, in experimenting with cuttings, we succeeded in striking the ends of green shoots of the grape; and now, by the use of bottom heat, we can root even the laterals with almost as much ease as a Pelargonium. We have often explained the method to friends, and some of them pursue it in their regular course of propagation. The plants thus made, however, are not as strong as those from single eyes. The mode described in Horticola's article, of taking a green shoot three feet long, and planting it in the open air, is a novel one, and will attract attention. The reader will not fail to observe that in about a week the cuttings began to grow, and that not one of the fifty failed: a success very remarkable. No doubt scores will attempt it during the coming season, but they should be careful not to remove from their vines shoots which can not be spared. Let us suppose, with Horticola, that a shoot is accidentally broken off; this will generally be at the point of junction with the old wood. Pare off the lower end square and smooth, and remove the leaves; cut the upper end off an inch above the first tolerably developed bud, and plant as described in Mr. Rubens's letter. We should put the cutting in a light, sandy soil, water freely, and shade from the sun till the cutting gets well established. The reader must bear in mind that experiments like this have the chances against them, under the influence of our hot sun and dry air. Then, too, we must consider the chances of ripening the wood before winter sets in. We hope, however, the reader will not be deterred from making the experiment, for while digging in this mine he may chance to strike a vein of the purest gold. The reader will not fail to observe, also, another interesting fact in Horticola's article, that vines may be successfully transplanted in summer. It may not often be necessary to do this, but it is well to know that it may be done when occasion demands it. We may as well say, however, that transplanting can not be done in this country with the same success that attends the operation in Europe; and this is especially true in regard to the size of the tree or vine, and the season at which it is done. This fact is getting daily to be better understood. We are always glad, however, to have experiments tried, in order to ascertain where our stopping-point begins. Some may lose by such experiments, but we are all gainers in the end.—Ed.]

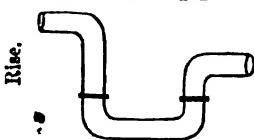
ECONOMY AND SIMPLICITY OF HOT WATER FOR HEATING GREENHOUSES.

BY R. BUIST, PHILADELPHIA.

We have used hot water in our establishment the past twenty-three years for heating our greenhouse erections,—at first, with great caution and some small fear; and we consider it economy wherever there is an amount of 2,000 square

feet of glass to heat. We have seven of Burbridge and Heally's double cylinder ribbed boilers in operation; they cost (made in Philadelphia) from \$35 to \$45 each, and with Sylvester register doors, bars, and fixings, about \$20 additional. The greatest capacity we have put any of that kind of boilers to is in four houses, each 55 feet long and 18 wide, and kept at a temperature of from 45° to 75°, as required, using 600 feet of four-inch pipe for the purpose, and find it fully sufficient. We find no difficulty in filling circulation, or any arrangement we undertake. We are, however, particular to have an air-pipe at the highest point, and also fill the boiler and pipes at the extreme end, having found at our early adventure that there was an objection to the arrangement for filling at the boiler, causing frequent eruptions of hot water from the boiler, thereby impeding or entirely defeating circulation. We prefer having the extreme end of the pipes about 12 to 18 inches higher than the boiler, and all the extremities must be on the same level, or the highest end will always have the hottest water. We have more than once heard it said "something wrong with the pipes," but have generally found it "something wrong" with the attendant, which was readily discovered by feeling the pipes on the upper surface backward and forward till we came to heat; then on the under surface, which if warmer than the upper, water was certainly deficient; but if the cold was only in spots, with a cracking noise in the pipes, air had got into them, which is a very rare occurrence, and caused by the pipes being out of an even inclination. The air-pipe must be occasionally examined with a wire or rod to keep it clear of incrustations.

All the boilers should have a tap at their lowest part to empty them when required. We have them, however, that have not been emptied the past five years. We find water perfectly ductile in its adaptation. You may dip the pipes to almost any accommodation, observing the following rules. If you wish to dip the flow-pipe at any place, the dip must be shorter than the rise, thus:



If in the *return*-pipe, the dip must be longer than the rise. Wherever these dips occur, however, there must be an air-tube. It is all important for success in every heating operation, that simplicity, cheapness, and durability, with economy of fuel, should be combined. We therefore look for a cheap, efficient boiler and four-inch pipes at 25 to 30 cents per lineal foot.

The "one boiler system," as it is called, has been adopted very successfully in some European establishments, while others have failed from deficiency in working-knowledge. We presume, however, that there are none more effective than that of Thos. Winan, Esq., of Baltimore, where ten or twelve greenhouses, and nearly as many graperies, with mansion, carriage-houses, etc., are all completely heated by one tubular boiler, with the greatest simplicity in its manipulations.

[The interest of the "Boiler Question" is by no means confined to this continent; it is at present discussed in the English journals a good deal more than in ours. The "one boiler system," alluded to by Mr. Buist, is said to be most efficient there. The "Polmaise" is being discussed again, and a recent modification of it by Mr. Kidd is said to be a great improvement; but this modification is nothing more than the hot air furnace common in dwelling-houses all over the United States. Mr. Winan's boiler must be a powerful one, and we should have been glad if Mr. Buist had told us who it was made by. Making a "dip" in a pipe, as illustrated by Mr. Buist, is a point that has been warmly discussed, but we know that it can be done without detriment to the circulation of the water.

We prefer, however, to make the dip and rise at an angle of about 45° instead of a right angle; but it can be done either way. We do not make the statement as a matter of opinion, but as a matter of fact. We hope to have the pleasure of hearing from Mr. Buist again. It is always a gratification to see in the pages of the HORTICULTURIST the names of its old friends.—ED.]

THE CURCULIO.

BY DR. I. P. TRIMBLE, NEWARK, N. J.

THE past has been a season of fruit: all kinds have been in unusual abundance. Cherries, Pears, Apples, and Plums have been within the means of all classes in all parts of the country; and even Apricots and Nectarines, by orchard cultivation, have been seen in our markets. But let no one imagine from this circumstance that the Curculio, the *great destroyer* of fruit in America, is extinct, or even diminished in numbers. Let no one suppose for a moment that this apparent cessation of hostilities is due to the use of Whale Oil Soap, or fumigations, or sulphur, or lime, or any other, or *all* other specific remedies for the Curculio that we see so constantly recommended in the fruit books and agricultural papers.

The season has been a remarkable one: fruit of every kind set profusely. The Turk commenced operations as usual, and probably as much fruit suffered this year as any other; but with so much to begin with there has generally been an abundance left, though I have hardly seen a Plum-tree that did not lose half or three-quarters of its fruit, and in many instances all has been taken. In many Apple orchards I have seen the ground thickly strewn with punctured fruit, but still there was plenty left. The Cherries and Peaches, as is usual when the crops of Plums and Apples are abundant, suffered but little. The Apricot being the first fruit large enough for the attacks of this insect, will always suffer alike, and requires the utmost vigilance to save it any year. The Nectarine, though not so early, is a special favorite from its smooth and tender skin; it also is seldom saved, except when under glass.

I have had a long war with the Curculio. I have battled with him through fifteen campaigns, and, except the three first, when I relied upon the weapons of quackery, have always conquered. I have used the various washes, and fumigations of horrible odors. I have built fortifications of cotton and tar, and troughs filled with oil, round the bodies of the trees. I have placed whole loads of offensive manures under favorite fruits, and on one occasion bored holes in the bodies of trees and plugged in charges of sulphur. Even at this time I occasionally jarred the trees over sheets, as directed in some of the books, and killed large numbers of the enemy, but subsequent experience proved that this last was not effectually done: the consequence was, I had no Apricots, no Nectarines, no Plums, and but few Apples except little knurly things.

But since those three years I have resorted to the *jarring* process systematically, and have found it a perfect remedy. My fruit crops since have never failed; even the Apricot and Nectarine trees never losing any portions of their crops from this cause, and frequently overloaded.

The *black knot*, that disfigures the Plum orchards in so many parts of the country, and finally destroying so many trees, is also caused by the Curculio.

The *rot*, that carries off in a few days so many kinds of Plums just before they ripen, and when we think the crop secure, is also caused by the same enemy.

If the Curculio passed a part of its life, as most other insects do, exposed to the attacks of the ichneumon, some one of these parasite flies might come to our rescue. But its larvae are so deeply imbedded in the fruit, that the smaller varieties of these flies could not reach them with their ovipositors, and the young Curculio is too small to answer as a nidus for the larger ichneumons. And then, too, they penetrate into the earth to the depth of several inches, as soon as they have come to their growth and leave the fruit. As the ichneumon is not known to use the bodies of the imago, or mature insect of any kind, as a deposit for its eggs, it is not likely to choose the Curculio. Still, as there has been a notice lately published by some gentleman in Canada, that he has found parasite insects in the larvae of the Curculio, I will not venture to say that it is impossible; and if it should prove true, *let all the people rejoice*. There was a time when an insect pest threatened the entire destruction of the wheat crop in America, and in the midst of the most fearful alarm, a little ichneumon fly took charge of the matter and settled it effectually. If this Curculio question could be settled in the same way, the whole people of America might partake freely of all the varieties of our glorious fruits, at an expense merely nominal compared with the present. The total destruction of this little insect, of which it takes *four* to weigh a single grain, or 5,760 to make a pound, would add more to the comfort, the health, and the happiness of the whole people of our country than has been brought about by any one cause since the extinction of the Hessian fly.

In France, parts of Italy, in Persia, and Independent Tartary, they have apricots as we have peaches in our Middle States. In the more mountainous parts of these countries, where they have the extremes of heat and cold, they flourish best: in this country the cultivation of this delicious fruit has not been understood. We have supposed it could only be grown under glass, or as a wall-fruit; it will flourish high up in mountain regions, and the less early spring weather the better.

In parts of Germany, plum-trees line every road, and the fruit is so abundant that they can send dried plums or prunes to us so cheap, that the beautiful boxes they are packed in are worth nearly the cost. In these countries *they have no Curculio*. We have the same kinds of fruit-trees, as favorable climate, and soil as good, but a large portion of our population, in a majority of seasons, have but little fruit of any kind, and but few ever see an apricot. Now the question arises, What can be done? We may hope for the discovery of some cheap and effectual remedy. We may hope also for some cure for consumption or cancer, and we have no right to suppose that we shall always hope in vain; but we are obliged to say that such cures are not now known. I do not wish to discourage others from experimenting with the various remedies so boldly recommended, but merely to say, that my experience has been so unfavorable, that I have no confidence in any of them. Suppose you discover a fumigation so disagreeable that it would drive the Curculio from your trees; it would not kill them, and back they would come as soon as the smoke had cleared away. And the idea of keeping up that kind of a war for six weeks is absurd. About the same may be said of the various washes that are to be thrown into the trees by hand-engines or syringes. Tar upon the bodies of your trees would prevent them creeping up for a day or two until it became glazed, but they are already in the trees, and seldom creep either down or up. And they can fly, and pass from one orchard to another. No. The Curculio attacks our fruits with but one object—to perpetuate its race. The young fruit is its proper nidus, and if you drive it from one tree it will find another. Each female Curculio has several hundred eggs to dispose of, and if she can, will take as many hundred young plums for their portions; and I think I see

her laughing in her sleeve at the idea of disagreeable odors stopping her in the performance of that duty.

We may guard ourselves to some extent against the ravages of this pest by gathering carefully every day the punctured fruit, and destroying it before the larvæ have escaped. A neighborhood combination for this purpose would be the proper plan, and would probably be effectual. In *gardens* it *must* be done, or the jarring process over the sheet will be your only resource if you expect fruit at all. In larger fruit establishments—in orchards of Apples, Plums, and Cherries—have all your trees so inclosed that your hogs shall be there throughout the summer—the larger the broods of young pigs the better—and feed the mothers sparingly, so that they will be constantly watching for the falling fruit. Have your poultry in the same inclosure, and although they will not eat the young fruit, the full-grown larva or grub of the Curculio is a dainty morsel for them, and all they find after leaving the fruit and before they enter the ground, will not be very likely to do you any mischief the next year. But if this has not been done, or your neighbors decline to join you in the undertaking, and you find, when the eighteenth day of May comes, that the Curculio is upon you, take a careful survey of your orchards, and calculate the probable value of your crop of fruit, if what is then on the trees can be got to market in full perfection. If you decide that the fruit will be worth more than the cost of preserving it, arrange the plan of the campaign at once—prepare your sheets, for they are all the weapons you will require; have extra labor ready, (stout boys, if reliable, will do,) let the corn, potatoes, and even the hay and grain harvests be subordinate, unless your force is so strong that all can go on together.

During wet days, and some cold windy days, the Curculos are inactive, but when the pleasant weather comes, and especially the *very* hot days in May and June, *how soon* they make up for lost time! All insect life is active in proportion to the heat of the weather, and I have sometimes thought, when the safety of a hundred bushels of Apricots depended upon the labor of a few hours, when the thermometer stood at 120 in the sunshine, that nothing else on earth could be so invigorated by heat as the Curculio.

This business of securing fruit from the Curculio, where the pest has become fully established, is a most laborious one. The patience of nine out of every ten that attempt it will be exhausted; hence the necessity of making it a matter of calculation. You must begin even before the fruit is large enough to be injured, for the insect is lying in wait for it, and can frequently be taken before any mischief has been done. In observations carried through a series of years, near the Hudson River, in the latitude of 42°, the first signs of the Curculio were upon the Apricot on the 18th of May, and from seven to ten days later the Plums would be attacked; and I have frequently seen the entire crop of these fruits destroyed within three days. The length of time necessary to carry on this war will vary, but will require more or less attention almost till the time of ripening. If you attack them vigorously from the first, you may have them so much diminished in number in two or three weeks, that the labor afterwards will not be so irksome; and if your trees shall be so plentifully set with fruit as to be benefited by thinning out, you may, if you choose, permit the few that remain to have a chance to perform the duty they were created for—prevent the trees from overbearing. There will be some risk in this, however, as the Curculio and you are not governed by the same motives. She does not estimate its value by what money it will bring in the market, as you do, and therefore you must be cautious about trusting it wholly to her management.

(To be continued.)

THE HISTORY OF A GARDEN-FRAME.

WRITTEN BY ITSELF.

YES! gentle reader, (as we used to say in the old-fashioned times—and I am an old-fashioned body in my way,) "Written by itself." And why not? In these days we have tables and chairs dancing polkas, and although they may have legs and I have not, yet I trow I have more *life* within me, generally speaking, than they have. Why should not I, therefore, essay my literary powers and tell my own story?

New this may be to you, and may be to me also, but that is no business of yours; and if my master is a good-natured fellow, and willing to help me with his pen, provided my tale be true, and you find a wrinkle or two worth knowing in it, what does it concern you to know how much is my writing and how much my master's? He and I always work together. He may have the advantage of me in penmanship; but can he grow a lettuce or a melon? Not a bit of it. I can. Ay, and what is more, I can make a bit of ground not half the size of your dining-room grow more crops in number in one year than you can, Mr. Reader, on all your big acres in two; and that is what makes me write my life for your benefit. So here goes.

Unlike the butterfly, my *Imago* state was that in which I first drew breath, a fine, handsome pine, down south, in good old Georgia. Gloriously did I with my fellows luxuriate in the freedom of forest scenery in that sunny clime. But, as with many a daughter of Eve, my beauty was my ruin! The ruthless axe at my root laid me low; and I will not dwell on the indignities I was destined to undergo until I found myself transformed into my present shape—a *four-light garden-frame, six feet by twelve*.

It was in this shape that I made the acquaintance of my present master, who, I must admit, uses me well; albeit, he insists on my being always at work. This, however, I do not mind, for since I have left the South, and find every body up in these northern latitudes so plaguy active, I have never liked to be idle, having, you must know, a certain degree of pride left in my composition, (notwithstanding the severe check my vanity received when that rascally fellow's axe put an end to the verdant beauty of my early forest life,) and consequently I should not like to be looked down upon as either useless or idle.

It is with me as with many people one meets with in the world; much depends, as to the good I do, upon the people with whom I associate. "Evil communications," etc., (you know the rest,) and if I fall into good hands, why, I can do no end of work. I always say to my master, "You do your part and I will do mine"—and I am now going to give you the history of the last year of my life, it having been, in my modest opinion, a pretty satisfactory proof of what I can do; and as I must admit that my style of living has something of the monotonous in its character, I will not weary your patience with more than this sample of my existence since I assumed my present form.

On the advent of the new year before last, I found myself resting on a spot of rich earth in my master's garden, and filled with a luxuriating growth of endive and lettuce, the latter of which I then supplied daily to my master's table, and which had been planted into my quarters in the preceding month of September, (the latter end,) from a seed-bed. The endive had not been sown so early, and I noticed that my master cut it back, leaving nothing but the centre small leaves, which, however, grew so rapidly, that by the end of March there was a fine

growth of bushy endive, which through part of March and April took the place of the early lettuce in my master's salad bowl.

I should mention, that the part of my lights that had contained the lettuce was emptied by the frequent demands upon it in January and February, and therefore, in the first week in March, my master refilled it with young lettuce plants from a seed-bed that he had provided in another frame, and these I immediately started into rapid growth; and by the first week in May they were ready to succeed the endive, which by that time had been disposed of.

I have always been fond of the fair sex. Their smile of approbation seems always to stimulate my efforts, and I conclude my master has the same taste, (or weakness, as you please,) for he pushed a few roots of violets into one of my corners before the winter, so that whenever the ladies of the family came, as they would do sometimes on a sunny day in February, to see how I progressed in my operations, there was always some fragrance to welcome their approach.

But having arrived at the first week in May, and having brought up a fine crop of lettuce, then in perfection, and some endive being still left, my master thought my further services were no longer required by them; and I found he was about to change my position altogether, and I soon discovered the cause. He had, it seems, toward the end of March, sown some cauliflower and early cabbage on a hotbed, and the plants were now in a state that required transplanting previous to their final removal to the open ground; a plan which many persons do not take the trouble to adopt, but which will always repay the gardener both as regards the quality and the early maturity of the crop.

I was therefore, early in May, removed to a part of the garden that had been prepared for these cabbage plants, and they were introduced to me immediately; and I assure you, that by the end of that month I had brought them into such a state of sturdy growth, that when they were then carefully transferred to the open compartments of the garden, they soon told a tale that I am too modest to repeat. I admit, however, I was proud of them, and those who have tried it know that it is not every one who can grow early summer cauliflowers fine from spring-sown seed.

Having a pretty good knowledge of gardening, I now thought that the time had arrived when I should be allowed a run of idle time; and, as I have said before that I hate laziness, I was wishing I could take a trip to a colder region, where I might find some constant employment; but I reckoned without my host, for before the last of my cabbages and cauliflowers had vanished, I found myself again on the wing to new quarters—where, I could not imagine; but my wanderings were of short duration, for my master and his man put me down in a few minutes in the melon ground.

I had seen plenty of melons grown in the open ground, but my master thought, as I heard him say, that he saw no use in my remaining idle, and that I might just as well serve his turn by helping the melons along, and at the same time take care of some pots of cuttings of greenhouse plants that he had picked up in his wanderings, and which there would be ample room for in my spacious quarters until the melons made more foliage. Accordingly, I was placed over a good bed of manure with rich compost upon it, and some fine young melon plants that came from the hotbed were planted in it in a couple of days, as soon as the compost was warmed by the sun above and the manure beneath; and off I started again for a fresh crop!

With the assistance of the sun and my master's watering-pot, I can tell you those melons grew; and after due thinning and stopping, and various manipula-

tions that seemed to indicate a vast amount of care on my master's part, (much of which seemed to me needless,) there certainly was as fine a crop of melons in August and September as I ever beheld. But before they were all disposed of, my services were no longer of any use, and according to my master's system of always keeping me busy, the time had arrived for me again to change my quarters.

About the middle of September, then, I was sent back to my old quarters for the winter; and a lot of old hotbed compost having been placed within my four sides, I found that three-fourths of my compartments were filled with young lettuce plants, (from a seed-bed made in a shady spot early in August,) and the remaining fourth was sown with cauliflower plants at two or three sowings between the 12th and 25th of September, and which it was to be my duty to protect until the spring. The lettuce grew steadily and well, and as my master took good care to furnish me with an ample overcoat of hay and litter as soon as frosty nights occurred, and, moreover, in very sharp December days, to leave it on sometimes in the day as well as at night, I had the satisfaction of sending as fine a bowl of lettuce to the Christmas dinner-table as any one would wish to eat. They are great salad people at our house, and, winter or summer, it never comes amiss. Were it otherwise, I suppose my winter's crop would be limited to seed lettuce or cabbage plants. But these we get as early from a spring hotbed as they can be trusted for planting out, and, consequently, my master does not trouble himself about keeping any of that tribe but cauliflowers through the severe weather.

And now I have told my tale. I have turned out,

1. A crop of lettuce and endive January to March.
2. Lettuce again early in May.
3. Cabbages, end of May.
4. Melons in August.
5. Lettuce in December.
6. Cauliflowers for the winter.

A plain, unvarnished tale, which, if they like it, all my brethren may imitate; nay, which many doubtless in skilful hands may excel. But I write not to the learned, but to the lazy, and also to encourage him who would be a gardener, but knows not how. And to the latter let me add, that my master says, no one can work me even for a single year without learning

"To look through nature up to nature's God!"

[We are much obliged to you, Mr. Garden-frame, for this interesting sketch of your history; no doubt you could tell us a great deal more. If all your inanimate brethren could speak, what lessons of wisdom might be learned! Let us hear your voice again.—ED.]

NEW ZEALAND SPINACH—(*TETRAGONA EXPansa*, LINN.)

BY CHARLES MORE, YORKVILLE, N. Y.

THIS plant is a native of New Zealand and the South Sea, and was introduced into Europe by Sir J. Banks in 1772. Captain Cook, in the relation of his voyage around the world, mentions it as a good vegetable, and a powerful anti-scurvy remedy.

Its cultivation consists in sowing the seed early in spring or late in the fall,

(the seeds will not be damaged by the frost, and will do better than those sown in spring,) in hills, from four to five feet apart, situated, if possible, in a warm and dry soil. One spadeful of rotten dung must be put into each hill. Four or five seeds will be enough. When they get to be strong enough they should be thinned to one or two plants in each hill. They will cover the ground in a short time.

I have no doubt this vegetable will be of great value in the Southern States as a summer green.

[We have often wondered why this spinach is not more commonly grown, especially as a summer and fall crop. Though not quite as good as the common spinach, still it is a nice green, is easily grown, and may be picked during all the summer and fall. It will sow itself when once introduced, and allowed to ripen its seed. It is a trailing plant, and the ends of the shoots and the young leaves are the parts used. We hope some of our readers will try it. If planted in spring, the seed should be soaked about twenty-four hours in warm water.—ED.]

CALADIUM CHANTINII.

(See Frontispiece.)

BY THE EDITOR.

We present for a *Frontispiece* this month, another of the beautiful variegated leaved plants, *Caladium Chantinii*. We have still another in preparation. Our present subject is one of the gaudiest of this tribe of plants; the rich, deep green ground color contrasts finely with the shaded crimson veins; and as a further variety and contrast, there are numerous spots, from shaded pink to pearly white. Our specimen is greatly reduced in size, and was taken from a plant grown by Mr. Hamlyn, gardener to W. C. Langley, Esq., of Bay Ridge. The leaves are usually from four to six inches wide, and twelve to eighteen long.



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

PLANTS, &c., RECEIVED.—From Mr. Barker, of Hartford, *Gazania splendens*, *Dianthus Verschaffeltii*, Pansies, Phlox, and Fuchsias, for which we return our best thanks. Also, some flowers of a new *Polyanthus*, *Golden Circle*, well named and very beautiful.—From Mr. Pentland, of Baltimore, some seedling Verbenas, with a request to test them, which we shall do with pleasure.—From Mr. Bridgeman, New York, seed of a new Spinach from New Holland, good for summer and fall use.

BROOKLYN HORTICULTURAL SOCIETY.—We are glad to learn that our Brooklyn friends are already in motion for 1861. The Spring Exhibition will be held at the new Academy of Music, on the 17th, 18th, and 19th of April. The prize list is very liberal, amounting to \$277, besides a list of valuable books for special prizes. Some of the leading prizes are the following: Best collection of plants in pots, \$15. Best 8 stove or greenhouse plants, \$10. Best 6 variegated or ornamental-leaved plants, \$5. Best 2 Orchids, \$4; best single Orchid, \$2. Best 6 Azaleas, \$8; best single specimen Azalea, \$3. Best 4 Ericas, \$6. Best single specimen Erica, \$3. Best 6 Pelargoniums, \$5; best 3 scarlet varieties, \$3. Best 8 varieties of Roses, \$6; best 6, \$4. Best specimen of tuberous-rooted *Tropaeolum*, \$2. Best 3 Fuchsias, \$3; best specimen, \$1. Best 4 *Gloxinias*, \$3. Best 4 *Cinerarias*, \$8. Best double Chinese Primrose, \$1. Best 6 *Hyacinths*, \$3. Best 4 monthly Carnations, \$8. Best 4 varieties of Pinks, \$2. Best collection of cut flowers, \$4. Best 6 cut *Camellias*, \$3. Best 12 cut Roses, \$2. Best 12 Pansies, \$1. Best Parlor Bouquet, \$4. Best pair of Hand Bouquets, \$3. Best Basket of Flowers, \$4. Best 2 bunches of Hothouse Grapes, \$5. Best dish of Strawberries, \$2. Best brace of Cucumbers, \$2. Best Lettuce, Rhubarb, Radishes, Asparagus, and Sea Kale, \$1 each; Best and most correct Labelling of Plants, \$2. In the special list, there are handsome book prizes for the best design for a yard 25 by 150, with a list of Fruits, Hardy Shrubs, and Flowers, adapted to it, each plant to be located in the design. Best design for a yard 25 by 60, embracing the same conditions as above. Best Fern Case. Best 3 Hanging Baskets. Best collection of *Aquatic Plants*, suitable for fresh-water aquaria, tank, or fountain. Best Fresh-water Aquarium, fitted up and stocked. Last, Greatest number of new members handed in by one person and elected before the close of the exhibition. The prize for this novel exhibition is Downing's Rural Essays, and we hope to see it contended for in a spirited manner. We are much pleased to see the prizes for Designs, and hope they will bring out some worthy competitors. One of the rules says, "All articles for competition must be brought on the appointed day by 12 o'clock, M. This rule will be rigorously enforced." We are glad to hear it. Let it be distinctly understood that you mean to be as good as your word, and you will effect a much-needed reform, and save the judges and the public from needless annoyance. We wish you all a right good time. Prize Lists may be had by applying to President Degravauw, 69 Washington Street, New York.



STUARTIA PENTAGYNIA.

STUARTIA PENTAGYNIA.—We saw a fine specimen of this beautiful shrub at the Messrs. Parsons', of Flushing, L. I., last season. It ought to be much more commonly grown than it is, blooming, as it does, at a season of the year when our shrubbery is quite destitute of flowers. The specimen at the Messrs. Parsons' is about ten feet high, and as many in diameter, forming a beautiful, compact, round-headed tree, or shrub. It is a native, is perfectly hardy, and will grow well in any ordinary good soil. It blooms in August; the flowers (of which our drawing, reduced in size, gives a good idea) are about two inches and a half in diameter, with a purple centre and crimped petals. We shall hope to see this fine shrub more common.

PROCEEDINGS OF THE PROGRESSIVE GARDENERS' SOCIETY.—Copies of these very useful and interesting essays, already noticed, may now be had of Saxton & Barker, 25 Park Row, New York. Price 25 cents.

THE HYDROPUlt.—One of our correspondents, it will be seen, objects to the expense of a garden engine in the application of Mr. Veitch's remedy for the "slug." This objection can be measurably met by using Vose's Hydropult, a portable, cheap, and efficient instrument for this and all gardening purposes. We have thrown water with it fully sixty feet perpendicularly. It is a convenient and useful article for both the greenhouse and garden.

A FINE BRACE OF CUCUMBERS.—During the last week in February we received a brace of Cucumbers from Mr. Stubbins, (gardener to Col. Colt,) measuring some *twenty* inches in length. This, for the season of the year, is drawing it out pretty strong. They were very fine, and equal in flavor to the best long Cucumbers that we have yet seen.

LATE CHERRIES.—We have just received a letter from Dr. Kirtland, in which he says, in reference to the inquiries of "An old Subscriber," that the Red Jacket and Tecumseh Cherries ripen a few days later than Downer's Late Red, and are superior to it in almost every point. They are described in Mr. Elliott's Fruit Book.

THRIPS.—We last month, in Mr. Richardson's article, page 118, line 17 from top, put "thrips" in his frame of Dahlias; and in this we were a little too fast. "Slugs" are the fellows to look after at that season of the year; "thrips" come along a good deal later.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.—At the late annual meeting the following gentlemen were elected officers for 1861: *President*—Dr. J. K. Eshleman. *Vice-Presidents*—Joseph E. Mitchell, J. B. Garber, Samuel Miller. *Recording Secretary*—Gustavus Heins. *Corresponding Secretary*—Charles Dingee. *Treasurer*—Robert Otto.

The proceedings on this occasion are said to have been very interesting, but we have received no copy of them.

BOOKS AND CATALOGUES RECEIVED.

Descriptive Catalogue of Fruit and Ornamental Trees and Shrubs, Grape-vines, Evergreens, Roses, Dahlias, Verbenas, and other Bedding Plants, &c., for sale at the Columbus Nursery, by *Bateham, Hanford & Co.*, Columbus, Ohio.

Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, &c., for sale at *Bridgeman's* Horticultural Establishment, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses, Astoria, L. I.

Catalogue of a choice Collection of Flower and Vegetable Seeds, embracing many new and rare Varieties, besides all the old established Favorites, with copious Descriptive and Cultural Notes, &c. Put up by *Barnes & Washburn*, Harrison Square, Mass., (four miles from Boston.)

The Nansemond Sweet Potato: Directions for Propagation, Culture, and Preservation. Also, Experience of Growers in different parts of the country. *Charles B. Murray*, (successor to Murray & Son,) Foster's Crossings, Warren Co., Ohio.

Catalogue of Greenhouse, Hothouse, and hardy Herbaceous Plants, for sale at *Bridgeman's* Horticultural Establishment, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses at Astoria, L. I.

Spring Catalogue of new and choice bedding-out Plants, Seeds, Bulbs, &c., for sale by *John G. Barker*, Wethersfield Avenue, Hartford, Conn.

Catalogue of Flower and Vegetable Seeds, Plants, Bulbous Roots, Grape-vines, &c., for sale by *James H. Park*, at his new Horticultural and Seed Warehouse and extensive Greenhouses, Court Street, corner of State, Brooklyn, L. I.

Descriptive Catalogue of Roses, Greenhouse and Bedding Plants, cultivated and for sale

at the Hampden Nursery, Springfield, Mass., by *Richard Bliss*, successor to Chauncey Brewer.

Fruit, Forest, and Ornamental Trees, and Hardy Flowering Shrubs, Native Grape-vines, Hardy Roses, Greenhouse Plants, Strawberry Plants, Rhubarb Roots, Asparagus, &c. *J. W. Manning*, Reading, Mass.

Annual Meeting of the Fruit-Growers' Society of Western New York, held at Rochester, January 9th and 10th, 1861.—We are indebted to Secretary Bissell for the proceedings, already published in our columns.

Report of the Committee of the Overseers of Harvard College, appointed to visit the Library for the Year 1860.—We learn from this that 8,500 volumes were added to the Library during the year 1860. The total number of volumes is over 90,000, besides some 50,000 unbound pamphlets: a wealth of literature without an equal in the country.

Bridgeman's Descriptive Catalogue No. 6. New and Select Bedding Plants, Roses, &c., for sale by Andrew Bridgeman, 878 Broadway, New York.

Abridged Catalogue of Fruit and Ornamental Trees, Vines, Roses, &c., for sale by *Edward J. Evans & Co.*, Central Nurseries, York, Pa.

A Descriptive Catalogue of a choice Collection of Vegetable, Agricultural, and Flower Seeds, containing all the select varieties of our own growth, and a large assortment selected from the Stocks of the first Continental and English Growers, &c. For sale by *Benjamin K. Bliss*, No. 210 Main Street, Springfield, Mass.—The printer deserves a medal for the handsome manner in which this Catalogue is printed. Some of our friends will have to look out for their laurels.

Descriptive Catalogue of Fruit and Ornamental Trees, Flowering Shrubs, Roses, Vines, &c., cultivated at the East New London Nurseries, New London, Conn. *Wm. H. Starr*, Proprietor. *H. E. Chitty*, Manager.

Proceedings of the Eighth Session of the American Pomological Society, held in Philadelphia, September 11, 12, and 13, 1860. Published by the Society.

New and Rare Plants introduced and for sale by *Isaac Buchanan & Son*, Nurserymen and Florists, 9 West 17th Street, New York. Gardens, Astoria, L. I.

Additional List of Flower Seeds, including Novelties for 1861, for sale by *Alfred Bridgeman*, 878 Broadway, New York.

The Cranberry Culturist; being a concise Practical Treatise on the Cranberry, &c. By *W. H. Starr*, East New London Nurseries, New London, Conn.

Catalogue of Greenhouse, Stove, and Bedding Plants, cultivated and for sale at the Commercial Garden and Nursery of *Parsons & Co.*, Flushing, L. I.

Diseases of the Throat and Lungs. By *R. T. Trall*, M. D. New York: Fowler & Wells, 308 Broadway, New York.

WORKS OF DR. HARRIS.—We are glad to learn that Messrs. Lippincott & Co., of Philadelphia, are about to issue the Entomological Writings of Thaddeus William Harris, edited by William Sharwood. The volume will conform, in style and appearance, to Dr. Harris's "Treatise on the Insects of New England Injurious to Vegetation," now being reprinted. The writings of this eminent entomologist ought to find their way into the library not only of every scholar, but every horticulturist; for the latter it will have a peculiar value.

Correspondence.

MR. EDITOR:—Having read an article in your February number touching the Rose-slug, I am induced to communicate my own experience in exterminating the so-called pest.

I have already made some statements to this effect one year ago, at a meeting of the N. Y. Farmers' Club; and as the season is approaching when such information would be acceptable, I would, if you consider it worth a place in the columns of the Horticulturist, give a more detailed account of my practice. It is this: I obtain from the road a quantity of well-sifted, dry dust. I then procure some soot from the bituminous-coal chimneys, and mix as much of it with the dust as will make a dark-colored compound. I then have a tin box made, in shape and size of a quart measure, with a lid or top to fit, perforated with small holes, similar to an old-fashioned pepper-box. I therein place this fine, dry dust; and early in the morning, while the dew is on the leaves, give them a thorough dredging. This I commence to do when the slug first makes its appearance, and so continue, at intervals, until the rose-buds are about to expand. And also after rains I find it necessary to repeat, as the former application is liable to be washed off the leaves, which encourages them to renew the attack. By a timely commencement of the above process, I will have nearly exterminated the pest from the bushes when they are in full flower. By this process I have secured a second and third bloom on my monthly Rose-bushes, which were perfect.

Now, sir, I will give you my reason for using the soot with the road-dust. It is, that the dust in itself is of an unsightly grey color, which, to *my eye*, is objectionable. By mixing the soot with the dust, we preserve some harmony of color with the foliage. I have used dry, air-slaked lime alone, but what does it look like in combination with roses? Scotch snuff, used in the same way, is good, but rather expensive; furthermore, it does not dissolve readily with the moisture on the leaves, as does the road-dust, thereby rendering it a sort of pasty substance, adhering to the leaves for a longer time. The principle of my theory is, to adopt something of a nature that will attach to the smooth, waxy texture of the leaves, and remain, for the time being, to prevent the close adhesion and comfort of the slug. I do not pretend to say that ~~we~~ kill the slug by this process; but he *will* "vanish to parts unknown."

The "skip-jack," which is so destructive to the Melon, Turnip, Radish, &c., when they have formed their first leaves, can be exterminated in this way, by applying it at intervals. If this insect can be kept from its desired food for two hours, it will die of hunger. Another brood will probably make its appearance; repeat, until the plant is out of its reach, which will be very soon if the first leaves are cared for. In conclusion, I would say to those who do not consider a little labor and attention a hardship, they will be rewarded with success, as I have been.

GEO. H. HITE, Artist.

Morrisania, March 15th, 1861.

[We think the "slug" is in a fair way of "catching it." Mr. Hite, being an artist, applies his remedy with an artist's eye. The idea is not a bad one. We go in for "harmony" in all things. We hope the remedies we publish will be fairly tried, and the results sent to us, that we may know which is the best. The slug will find it difficult to get over all this dusting.—ED.]

P. B. MEAD, Esq.—*Dear Sir:* It has been my pleasure to receive instruction from the pages of the HORTICULTURIST for some years. We have some fine Grape lands along the shore of Lake Erie, in our county, and although Grapes have been successfully grown for thirty years, it is quite recently that attention to vineyard culture has been awakened. Isabella and Catawba are principally grown. The former has been in high repute, but seems more liable to

mildew than some others. Catawba is quite healthy, and is growing in favor. It will ripen here almost as well as the Isabella. Concord is beginning to give fruit, and is coming more into favor the better it is known. Its perfect bunches and large berries, with its certainty of maturing, make large amends for its lack of quality. We have fruited several other kinds, but will defer a description.

I would like to know if Diana requires any peculiar management. Does close pruning injure it? Mildew was very bad last season on the Isabella. In my observations on the different vineyards last season, I found where the ground was in high condition, and often stirred, it was most severe. In vineyards where weeds and grass were allowed to grow, and on some single vines where there was no cultivation, there was little or none of the mildew.

Will you, Mr. Editor, please tell us all you know? (Editors must have no secrets.) We do want light on Grape culture in particular. Yours truly,

A. S. Moss.

Fredonia, N. Y., Feb., 1861.

[Isabella and Catawba are both liable to mildew and rot, the latter especially. We are glad to know that the Catawba has thus far escaped with you. You will be fortunate if you enjoy this immunity for any length of time. Concord is a good grape; when well cultivated, about equal to the Isabella, and much larger and more certain. The Diana does not require peculiar management; it requires *good* management. Close pruning injures it, as it does all other grapes. Stirring the soil in such a way as to *disturb the roots* would tend to increase mildew; stirring the soil without this would tend to check it; so that you might very well have seen the conditions you name. We, on the contrary, saw a vineyard of some two acres, very weedy, from which not fifty pounds of grapes were gathered; but the weeds were not alone concerned in this. You may rest assured that judicious culture is always beneficial, however exceptional cases may seem to militate against it. We desire to have no secrets from our readers; but, on the contrary, to tell them whatever we may know; so let them ask freely. We have begun a series of articles which we hope may throw some light on Grape culture, at least in regard to those who are beginners.—ED.]

HORTICULTURAL SOCIETIES.—P. B. MEAD, Esq.: As you have thought my remarks upon the above worthy of notice, I beg to offer a few more. One of the objects of these Societies I take to be (or should be) to encourage the raising of superior vegetables for *human* use.

I beg to protest against the vulgar mammoth standard which seems to be set up. I deny that the man that shows the biggest pumpkin is necessarily the best gardener, or that his pumpkin must be "the cheese." As a rule, the medium-sized kinds of vegetables are the best for table use. Largeness, *for the variety*, is usually indicative of excellence, but largeness *per se* is not. The Dwarf Cabbage is better than the Ox-heart; the Savoy than the Drumhead; Horn Carrot than the Orange, &c.

Setting up so low a standard must have a tendency to prevent improvement in taste in consumers, and taste for improvement in producers. So long as the public will eat *cattle* Carrots, Beets, Turnips, Corn, and Cabbage, the gardeners will not trouble themselves to raise any thing better.

I deny the capability of judges to tell the quality of vegetables by a glance at them in the raw state.

I protest against superior, delicate varieties of fruit being damned because they will not "market." It is, of course, a very important point for growers for that purpose to look after, but not for others. It would be about as reasonable to recommend private growers to cultivate gourds instead of melons, because they would stand pitching out of two-story windows.

The grower's name should be attached to each lot exhibited, or, at any rate, if the prizes are for collections, let it be fairly so understood, and save growers the trouble of competing, as they

have not usually the long purses necessary for fancy marketing, or the spare time for begging tours.

BROOKLYN.

March 11, 1861.

[Brooklyn, as usual, makes some good points. *Cattle* roots might very well be banished from Horticultural Societies such as the Brooklyn, and left to Agricultural Societies, which might fitly encourage them. The gardener, being confined to *human* roots, would naturally endeavor to produce them with size and excellence combined. Competent and experienced judges can generally approximate to the comparative excellence of vegetables by a careful examination, there being certain points which indicate quality even in the crude state; but the best test of the "pudding is in the eating." Some delicious varieties of fruits will not "market" well; they should not, for this reason alone, be condemned, but be confined to amateurs. The "marketing," however, is too important a point to be overlooked. The case would be fully met by offering prizes for both, not losing sight of quality, however, in either. The grower's name should always be attached to each lot after the judges have made their examination. This is commonly neglected, and is a source of vexation to visitors. Every article should also have its proper name attached, as many go to exhibitions to learn the names of plants.—Ed.]

P. B. MEAD, Esq.—Sir: Permit me, as a subscriber to the HORTICULTURIST, to make a few inquiries.

I wrote to you for this purpose in November, but the letter may have shared the fate of many more valuable documents destroyed by the fire.

I am building a cold vinery, 55 by 13½ feet; front wall 1 foot, and back 12 feet; exposure, 80 deg. east of south. Could I use the back wall for Figs or Peaches? or, if I should decide to use it for Grapes instead, would I not find it more profitable to plant the Isabella or Catawba, (instead of the foreign varieties,) neither of which will ripen oftener than once in three or four years in our garden, and then not quite as thoroughly as they do elsewhere?

To avoid the attacks of the grub upon the Peach and the Apricot near the surface of the ground, and under the bifurcation, I have thought of working these trees upon the Canada Plum, or the Almond. The soil is a good gravelly loam, with both sand and clay for ingredients. For garden culture, would not the Peach thrive as well upon the Plum or Almond as upon its own roots, even if the grub did not exist?

The fruit-garden which I am about to plant, 300 feet by 100, is much exposed to severe winter winds. To shelter it, I wish to plant suitable trees, so as not to occupy a wider strip of ground than ten or twelve feet, the branches extending each way five or six, or less if it can be done, and permit a height of twenty-five or thirty.

What distance apart should the trees be planted? and is there any more rapid-growing tree than the Norway Fir, which would, by a reasonable amount of shearing, secure a tolerable exclusion of the wind? and how much of a task would such shearing be?

In making this application, I hope I do not trespass on your time and patience.

Very respectfully, your obedient servant,

JOHN PUMFELLY.

Owego, Feb. 5, 1861.

[We do not quite like the form of your house, but we suppose it is "done" now. Figs would do better than Peaches on your back wall, but you can not grow the *best* fruit of any kind there. If you grow any thing there, let it be the Sweetwater or the White Chasselas. We think the Delaware, Diana, Hartford Prolific, and Creveling would all ripen with you in the open air. Try them. The Peach will grow well on either the Plum or Almond, and the former would relieve you of much trouble with the borer. To prevent the borer from attacking your Peaches, paint your trees with common tar reduced to a liquid state by hot water; apply it beneath the surface a couple of inches, and six or eight above, early in the spring. Any refuse

grease laid on thick will answer as well as the tar. When cut off below, we have known the borer enter the tree two and three feet above the ground. The above remedy, however, *timely* applied, will answer the purpose. Where the borer is already in the tree, it must be cut out.—Either the Hemlock or Norway Spruce would make a beautiful hedge, and answer your purpose fully. We can think of nothing better. The shearing would be a comparatively small matter. Plant the trees about four feet apart, and take out the leader. It will come in again, but must be removed from year to year, to keep the bottom well filled. The Norway Spruce will make a hedge sooner than the Hemlock, but not such a pretty one.—Your former article was consumed, and we are obliged to you for repeating the questions.—Ed.]

Mr. EDITOR:—I have noticed an article in the March number of the HORTICULTURIST, under the heading of "Imported Roses," by Mr. Andrew S. Fuller, of Brooklyn, L. I., in which he makes assertions and uses phrases that seem to require a little more ventilation or elucidation, in order to make them fully intelligible to your numerous readers.

It is not my purpose to dissent from the conclusion sought to be derived, but to question the method and statements by which that end is attained. I may therefore be excused for propounding, through you, a few questions, with the intent of bringing forth more light on the subject.

In the first place, permit me to ask what Florist or Nurseryman neglects to produce Roses himself, and thus "allows his simple vanity to get the better of his judgment?" or what is there particularly simple or vain in choosing to grow Roses, or not to grow them?

Again, have not new American Roses of decided merit been sold in this country at as good prices, and with as ready sale, as new French Roses are in France? Among my own importations, I have received the new Rose, every year in limited quantities, without extra charge, but very much doubt whether they could be obtained here from the producer, under like circumstances, without paying a considerable advance.

For the sake of argument, we will admit that the Rose Madame Trudeau was sent to France to be propagated, and afterwards sold to our people as a French Rose: was the discovery, by those who purchased it, that so good a Rose as this was an American production, a just cause for the least chagrin? Why, sir, I should judge, with my feeble perceptions of human nature, and of American human nature particularly, that "a peep behind the scenes," resulting in such a discovery, would be very gratifying to every lover of progress in this country.

Respecting French Roses grafted on the briar, we have not so much fault to find with the root as the disposition to hedge around their stock with innumerable smaller ones, that draw the sap from the stock for their own sustenance, treating the foreigner on the top of the stock as an intruder. No doubt the disposition to sucker is promoted by the dryness of the main stock, but even the most vigorous will produce them, and if not frequently looked after and pruned out, they will deprive the stock of nourishment, and thus cause it to die.

Passing over the next three paragraphs, we come to a statement showing what Roses can be bought for here, and also what it will cost to import them from France.

This showing implies that we have a choice in the mode of procuring them. Suppose we were to make out a list embracing fifty varieties of the best Hybrid Perpetual Roses, either on their own roots or on Manetti stock—say, from 25 to 200 of each—where is the Florist in this country that will undertake to furnish them? I venture to assert, without fear of contradiction, that there is not a Rose-grower in this country that could furnish one half of them, and those he did furnish would probably not be the most desirable kinds, but those only that are the most easily propagated. And this is not the case because growers here are not alive to the importance of it. There are those who have been engaged in the business for years,

who have not managed to grow, of the most popular kinds, more than they require to supply the demand in their immediate vicinity. The cause of this deficiency may be, that they prefer the ready cash produced by the sale of them, to having a good stock in the ground to get up a stock upon.

The statement respecting the cost of importing Roses must be based on Mr. Fuller's experience, or he would not have thus given it as a positive result. On the faith of this, may I be excused in seeking to be informed where Roses corresponding, or even approaching, to "first-class, large, two-year-old plants," can be purchased at the rate of seven cents apiece by the thousand? Why, Mr. Editor, many that I could mention, as well as your humble servant, have been silly enough to pay thirteen cents each for very small Roses on their own roots; and the information that will enable us to get Roses any way approaching to first-class, large two-year-old plants at a price so greatly reduced, would merit and shall receive our unqualified and heartfelt thanks.

I have before me the invoices, for years back, of Roses which I have imported, and by them I find that every plant, large and small, good, bad, and indifferent, including expenses, cost me, on an average, upwards of 17 cents each; and if the proportion of loss were to be added to each, (without including near two thousand on their own roots, imported by us last year, which were almost a total loss,) they would stand me in not less than 25 cents each; so that, instead of the difference being six cents in favor of importing, it is five cents each against importing, provided they could be purchased here, of the kinds desired, and at the price stated, besides the advantage of having better plants.

I am curious to know what is meant by "Angers being the Rochester of America." Is it that they produce a great many Roses, or a very few Roses? or are we to infer that Angers is the place where we can buy Roses so cheap, and that Rochester is similar to it in that respect? or does it not apply to Roses at all, but to something else yet unrevealed?

Not having seen Mr. Fuller's production till yesterday, and having been engaged revising proofs of a catalogue of new Bedding Plants until this morning, I have not had the time to give the subject as much consideration as I would wish. Awaiting answers to my queries, and with the assurance of their grateful reception, I leave the subject for the present.

Very respectfully, ANDREW BRIDGEMAN.

[We have only time to say, in reference to this whole subject, that we shall be glad to have all the facts brought out.—ED.]

EDITOR HORTICULTURIST.—*Dear Sir:* In reference to the Delaware Grape, I want a little information. I commonly neglect giving proper attention to my vines, and as a labor-saving operation, have for some years permitted the Rose-bugs to do the needed thinning out of the crop.

Until the past year these voluntary workers have confined their ravages to just bounds; but then they were altogether too effective, except upon the Delawares. Strangely enough, (to me,) they paid no attention whatever to this Grape; and this has been the case during the three years my Delawares have yielded fruit. There was no difference in position; the same trellis sustained six sorts of Grapes, Delaware, Diana, Rebecca, To Kalon, Catawba, and Isabella, and all except the first suffered. Has your attention ever been called to this peculiarity? and can this freedom from Rose-bug ravages be relied upon? and to what do you attribute it? If Rose-bugs have a chronic dislike to this Grape, it is important that it should be more generally known, and you would confer a favor on the community by some public statement concerning it.

I am anxious to know if I am to rely upon my own thinning out to prevent excessive bearing. My Delawares began bearing *almost as soon as I put them in the ground*, (one vine, a layer,

gave me several bunches the first season, not less than fifty the second, and over one hundred and fifty the third,) and they keep at it with a rapidly-increasing profuseness, having borne last season an average of about one hundred and fifty bunches of well-ripened and delicious fruit. I am sometimes fearful that my vines are over-burdened; and yet they have each year made a large growth of well-ripened wood. And, by the way, please tell me why the chickens so carefully select my Delawares in preference to all other Grapes, when the Rose-bugs carefully avoid them? Perhaps you think Grapes are not as good in June as in September.

Bay Ridge, L. I.

Truly yours,

GEO. T. HOPE.

[An instance, this, of mistaken mercy. You should have allowed the Rose-bug no quarter from the beginning, and must commence now. You can in a great measure rid yourself of them permanently by a little persistent killing; but you must be sure to kill them "dead," for they have as many lives as a cat. It is singular that your Delawares have escaped this pest, but we do not think you can rely upon such immunity. It would be curious to learn how far others have escaped, and we should be glad to have our readers give their attention to the subject during the coming season. You *must*, as a general thing, rely upon your own thinning out. Circumstances may occasionally regulate this matter for you, but not often. The small labor will be amply repaid. We are glad to hear that your Delawares give you such returns; the fact shows that your border was well prepared, and that your vines were not only properly planted, but well furnished with sound, healthy roots. But excessive bearing will gradually weaken them, and they will in the end die of premature old age. The vigor of youth should be regulated, and not allowed to run unchecked its rapid course. The Rose-bug is about the most disgusting and contemptible of all insects, and is too stupid to choose between a good thing and a bad one; chickens, on the contrary, belong to a higher order, have well-regulated tastes, and always take the best they can find; though there is, after all, some difference between Grapes in June and September, especially if they happen to be Delawares! If you would save your Delawares from the chickens, plant by the side of them some kind that is better—when you can find it.—ED.]

A WORD TO THE TRADE.—Thank you, Mr. Peter B. Mead, for the leader on the above subject. And I will warrant me there are hundreds and thousands of your friends who will say amen and amen to my thanks. "A word fitly spoken," and may it do good.

Allow me to ask a question. Suppose, for example, you send to our friends C. M. Saxton & Barker for \$20 to \$30 worth of books, and they were to charge you, "Packing 1 box, 75 cents," would you not think it "coming the giraffe?" It is a small matter complaining of so small a thing, and so is it to complain of sending a tree at fifty or at forty cents, when another was ordered; but, in this instance, admit a charge made for labor: two men, at \$20 each per month, will pack ten to twenty boxes per day, which, at above rates, pays \$7 50 to \$15 for less than 75 cents to \$1 50 expense. The right way to do is to charge for trees, and, as they have to be packed for the purchaser to get, make no charge for packing.

[The above approval, from our friend Dr. Philips, is peculiarly acceptable, though we ought not, perhaps, to expect thanks for performing a necessary though unpleasant duty. We have even been thanked by a nurseryman, who is fain to acknowledge that he has lost more than he has made by the practice; and this we believe to be the fact with all who indulge in it. We wish our friends would think of this matter seriously.—ED.]

PETER B. MEAD, NEW YORK.—*Dear Sir:* Reading to-night, in your January number, page 55, the queries propounded by Mr. Geo. H. Goodwin, from that famous place "*Hartford*," Conn., and your prompt answers, I propose to ask you a question from this spanking new republic; and, by the way, in the neighborhood of Hartford I guess there are some left who

would like to have a hand in "spanking" this republic, as my mamma used to spank this writer.

Some time since, in writing an article on fruit culture, I warned subjects to beware of two-year-old Pear-trees, and I was picked up by a sterling good writer. I prefer "maiden trees"—year-olds—to two-year-olds, because there are more fibrous roots, and fewer long roots; I prefer them because they are better, and, besides, cheaper. The reason they are better is, many unsalable in maidenhood are kept for two-year-old prices, and the fibrous roots bring additional advantages. Many thrifty yearlings have been advanced to seniority, because the extra price is an inducement. If select maiden trees are taken from the nursery and replanted at a distance of 3 by 3 apart, instead of remaining in the nursery, the tops and bottoms being judiciously pruned, then a two-year-old may be better. This is my opinion, from purchasing and growing trees since 1832. Am I correct?

I have yet another objection to two-year-olds. The proportion of top to root is not so good, unless the purchaser lifts the tree himself, and understands what he is after: and then, the hole for setting should be proportionally larger. I have bought two-year-olds from one of the best nurseries on record, replanted at a year old, and not had half the growth as from my own year-olds; of course, removal to a distance, and being packed for thirty days, makes a great difference.

If sorrowing with all suffering from losses by fire could avail, I could help; but nothing of that kind avails. Courage and determination to succeed are all that will do.

Yours, with best wishes,

M. W. PHILIPS.

Republic of Mississippi, Edwards, Jan. 25, 1861.

[*Republic of Mississippi!* That is a strange sound to our ears. We could wish it were otherwise, for the sake of the estrangements it will cause, and for the sake of our common country. Many of us, no doubt, have been naughty enough, and deserve more "spanking" than your mamma probably ever gave you. But, Doctor, we can not let you out of our "parish."—We are glad to hear that you were pleased with our answers to Mr. Goodwin. We seem, somehow, to have met the wants of a great many in those answers.—Your experience with maiden trees is that of a great many. Trees are planted so close in nursery-rows, that after the first year they become much injured. Some nurserymen understand this, and are now giving their trees more room, with the best results to top and bottom, and to the great satisfaction of their customers. Then, again, through carelessness in lifting, the older the tree the greater the injury the roots receive. We must keep talking about these things to get them right.—Thank you for your sympathy. We have some courage left, and a "determination to succeed."—ED.]

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

(Continued from page 182.)

Subject 4. Which is the best stock for the cherry for general purposes, the Mazzard or the Mahaleb?

Mr. TOWNSEND thinks the advantage of cultivating the cherry tree upon Mahaleb stock is that its wood becomes more dense and hardy. The growth of the tree is more vigorous, and not as subject to burst the bark. In some varieties cracking and bleeding are prevented, and the trees grow more rapidly, with the wood not as succulent; not as pithy as on Mazzard. Has trees ten or twelve years old on Mahaleb, and they are producing good crops.

Mr. ELLWANGER would add, that particularly upon a clayey soil the Mahaleb stock is better than the Mazzard. Trees upon Mahaleb are less subject to bursting. Some kinds, as, for instance, the Black Tartarian cherry, must be worked exclusively upon Mahaleb; and others, such as Burr's Seedling, Black Hawk, Cleveland Bigarreau, May Bigarreau, etc., are much better so.

As to the growth of the tree, etc., if worked *low* upon Mahaleb stock, the bud will not outgrow the stock; and if the trees be trained as "low standards," it is all the better. Let the branches come out low, and never prune the tree at all after the branches attain the size of one's thumb. Prune your trees while young, and get them into the right shape; in fact, ALL trees should be shaped while young. Cherries worked upon Mahaleb grow more vigorously while young, and yet they do not make as large trees.

CHARLES DOWNING has seen cherry trees upon Mahaleb stock which are eighteen inches in diameter; and thinks them better for northern and western parts of our country than Mazzards.

Subject 5. The Northern Spy apple; what is the value of it as an orchard fruit?

Mr. BEADLE, of Canada.—The Northern Spy has for two years fruited with us in Canada, and seems to promise very well, bearing fine fruit and plenty of it. It is *all* fine, large, well-colored fruit, and hangs well upon the trees. This is quite a desideratum, especially exposed, as we are, to high winds in autumn.

Mr. BARRY.—When the Spy was first brought forward it was charged to be a very shy bearer, and to bear a large proportion of inferior fruit in the crop; but now we have had fifteen or sixteen years' experience with the fruit, and ought to be certain as to the real importance of the tree and the real value of the apple. Apples for market form an item of immense importance in our fruit growing farms, and I believe the Northern Spy has improved every year in quantity and quality, becoming finer and finer every year. I find it is now the best of all our winter apples, and one which will always be found a valuable sort to plant.

Mr. SHARPE, some fourteen years ago, got some of the scions, and grafted into the top of an old tree. After a while became discouraged waiting for the scions to bear, and directed a boy to bud them all over to pears. The pear buds failed; but that very year the tree bore four barrels of fine fruit, which kept nicely until the next April and May; and, sir, I never ate an apple that has the flavor nor the freshness which those Northern Spy apples had. This year that same tree bore five barrels of fruit, which sold readily at \$1.50 per barrel, while other sorts at the same time brought only \$1.00 per barrel. If any body gets discouraged waiting for their Spy trees to fruit, I would advise them to try budding them over to pears, (laughter.)

Mr. BROOKS.—In 1855 set out an orchard with one hundred and fifty Spy trees in the one thousand trees. Some neighbors said I had made a great mistake; that they had grafted over every Northern Spy that they had planted. Now this year my trees have fruited, and fruited finely. If this fruit is one which we can carry into April or May with good flavor, and in fine condition, it will cause me to say with friend Bissell, (as to this important subject of having fine fresh fruit in the spring,) that the area of human enjoyment is thereby greatly enlarged.

Mr. FISH, of Monroe County, spoke of the Northern Spy being called by some persons a great humbug because it would not bear fruit the first season after setting out. People are generally too impatient to have their trees bear very early. One of my neighbors, of this temperament, who had set out quite a number, became last year discouraged, and dug part of them up. This year, those which were left standing have borne fully and finely of handsome fruit.

Mr. HOAG had seen Roxbury Russet and Northern Spy in June, in New York. It is a most splendid keeper. Cultivators can make it bear earlier by thorough pruning, and checking the growth to wood. The fruit has never yet been over-praised. The pruning which I speak of should always be to make the tree very open, and grow spreading, and thus give sun to the whole inside of the limbs, and to every fruit.

W. B. SMITH had pursued this plan of thinning out the top very thoroughly, and this year has had trees produce five barrels of fruit to the tree.

Mr. BARBER.—This Northern Spy originated in Ontario county, and the fruit was first tested there some forty years ago. It is a slow tree to come into bearing; often requires six or seven years to produce. You can't get a bushel from a tree that is seven years old; but when it *does*

pay, it pays. There are, however, localities where the crops can be hastened; for instance, upon the sunny sides of hills, in warm, rich, and deep soils. One of my neighbors has such trees in the centre of his orchard, upon a sunny side hill, and has had more profit from them, for the past fifteen years, than from any other trees in his orchard; and when he wants any more trees for profit he will plant Northern Spy. Other men in his neighborhood, whose trees are not in such favorable locations, are not as well pleased, and are grafting over their Northern Spy trees. There are some noticeable features about this variety. The trees need to be young and thrifty when planted, and you can not have good fruit upon them without extra care; keeping them pruned well and open, and not permitting them to overbear. The trees need a dry, well-drained soil, rich, loose, and deep, and good cultivation. The trees do not leave out too early, and consequently are not exposed to danger from late frosts from which some other varieties suffer. Apple-buyers watch them closer at market than any other sort. But a spot upon an apple does not affect the whole apple; even if it be half rotten, the other half of the apple is good, and retains its true sprightly flavor.

Dr. Sylvester stated that the Spy was extensively planted in Wayne county, and in most places was very fine. The trees are slow in coming into bearing; but when they *do* bear, they produce fine, sound fruit. The tree needs thorough, judicious pruning and cultivation, and careful thinning out of the branches. Any person, with a dry, nice soil, who will devote attention enough to the tree to keep it in good heart, will have fine crops of a delicate nice apple, and an apple that keeps, and keeps well.

Mr. Moody was a decided advocate for the Northern Spy. Many of his neighbors had planted it freely, and such as had not already grafted it over, never will; for the trees are now bearing enormous crops. The tree needs proper pruning, and the top should be kept open, for it is inclined to grow compact, and too much to shade the fruit. The not early leafing-out of the tree in the spring is quite an important advantage; for late frosts will sometimes kill back all the trees in the orchard, except Talman's Sweet and Northern Spy.

Mr. Hoag thought it a decidedly valuable tree, if well treated. The fruit is of superior quality, and such fine fruit always pays for good treatment. It does well if you give it sun enough by open pruning. Apple-dealers consider the Northern Spy the most valuable sort we have.

Mr. Townsend stated that, fifteen years ago, his father grafted the Spy upon the tops of two old trees, and in the sixth year from the graft they bore a crop of fine fruit. Has gathered nine bushels from those two trees. Picked the fruit upon a cool, dry day, assorted it carefully, headed up the barrels, and did not meddle with it until the 1st of April; but found that fully three-fifths were totally decayed, and the balance, which seemed fair, were decayed in the centre. My trees suffer from dry rot. The Spy is my favorite apple for eating, but they decay rapidly. Fruit-buyers dislike the blotches which it is apt to have upon the surface, and say that they "won't buy those blight, fungus blotches." My trees are upon a soil which is heavy, but well drained.

Mr. Barry was pleased to hear the opinions of the gentlemen who had spoken, representing all varieties of soil, and a circuit of a hundred miles or more; and, although they differ in details, the general verdict is that the Spy is a good apple. To be sure, it requires care, but no more than its ultimate value will justify. It requires a dry, warm soil, and some pruning; but so do *all* trees from which we get such decided returns. The thinning out should be done very lightly. This tree bears fine fruit, and it pays, and pays well, for good culture. The tardiness in coming into bearing is no objection, for the tree thus has time to become fully established, and is more sure for future years. The Spy bears enormous crops, and the fruit should not all be allowed to grow, or the limbs become thereby bent, and the sap obstructed, while the ground becomes poor and the tree impoverished by the production and ripening of such over-heavy crops. After a heavy crop of fruit, not only the Spy, but *all* apple-trees should be

well pruned, and the ground restored by careful cultivation. The fungus in certain localities is due wholly to local causes; it is not a general thing. As to the keeping, much depends upon the care in gathering, and on the care used in assorting previous to packing. In my cellar the Northern Spy is keeping as well as any variety.

Mr. L. B. Langworthy thinks he grafted the first tree with this variety in the county of Monroe, and has watched it closely. The tree needs pruning, and has a tendency to over-bear. The fruit has a very fine juicy, spicy flavor, and holds this flavor longer than any other apple in the world; while, as to beauty, there is no handsomer fruit. If carefully looked to, and well kept, there is no finer apple for the household; but for transportation to distant markets it has faults. Dealers do not like them for shipment because they are thin-skinned, tender, and liable to bruise.

Dr. Sylvester had found that his apples kept very much better by being sweated before being headed up in barrels. Never head up fruit while wet.

Ques. 6.—Is it advisable to plant, in western New York, the White Doyenné Pear for orchard purposes, in view of its present liability to crack and spot in certain localities?

S. B Gavitt, of Wayne county, would not recommend it generally in western New York; although there are some localities where, with a sandy or gravelly soil, it seems to have done well.

Mr. Smith, of Geneva, had noticed its success upon light soils, and had remarked that this year it was finer upon even clayey soils than ever before. Does not want to see finer fruit than some produced this past season.

Mr. Sharpe had set out, in 1858, about a thousand White Doyenné trees near his house, and they were doing finely. Never saw a crack nor a spot upon the fruit.

Mr. Maxwell thought that the disease affects the fruit worse upon old trees than upon young ones.

Mr. Barber thought the best mode of cultivating the White Doyenné was to cut the trees close, and get up good strong shoots, with large leaves, thus getting up a new action all through the tree, and more healthy fruit.

Mr. Smith supposed the disease to depend very much upon some local cause.

Dr. Sylvester agreed with Mr. Smith, for he had seen fruit crack badly upon the west side of a hill, while upon the east side, and not over one hundred rods off, the fruit was untouched and splendid. Thinks it can not be climate or soil which causes the disease in a case like that.

Mr. Townsend.—Upon my own grounds the fruit cracks badly, while upon the premises of a near neighbor the crop is first-rate. Thinks the cracking proceeds from an atmospheric cause; for the fruit upon both dwarf and standard Doyenné trees suffers alike. It must be a current of air carrying fungi to the fruit; for, in my case, it follows immediately a violent attack of pear blight. The fruit will be one day fair, and the next day with this fungus upon it.

Mr. Sinitli liked the White Doyenné because it is a fine hardy tree, and the fruit is one of the best market pears. It keeps easily, and ripens up easily and well, and is popular. Thinks all really fine pears more apt to suffer from diseases than the coarser fruit and coarser trees, which are harder, and resist disease better; but these coarser fruits are not as good.

Mr. Hooker had found that of this variety very few were fit to ship—not one in ten; and this seemed a good test as to whether it is advisable to plant the tree.

Mr. Jacobs has purchased a good deal of this fruit, and finds that it is better in and about Geneva and Canandaigua than here in Monroe county. New York dealers by quantities of good-sized and perfect Doyennés from Ontario county. Pears with fungus upon them we dealers always throw out and refuse entirely. We only accept perfect specimens.

Mr. Ellwanger stated that the White Doyenné always does well upon his own grounds; but, as to the question under debate, would answer, No. There is no necessity for planting

Doyennés when we have plenty of others equally, or about equally, good, which are not subject to this disease.

Ques. 7.—What is to be understood by the term a standard, and what by the term a dwarf tree?

Mr. Townsend remarked that there was a great misapprehension among tree-planters as to these terms. Calls a standard tree a plant growing upon a seedling stock of a variety where the plant will, when full-grown, make one of its own kind. Calls a dwarf a tree from a bud inserted into a plant which is analogous in species, but of a diminutive growth.

Several members spoke very briefly.

H. E. Hooker thought the term "dwarfing" was applied to the working of a scion upon a stock, which tended to produce diminutive growth, and thus tended to fruitfulness, and to increased size of the fruit. In the Pear this effect was produced by working upon the Quince as a stock. There are other terms which result from other causes; as, for instance, a tree of any species, or working, or size, may be rendered "pyramidal" by suitable pruning. In the Pear we call a standard tree one which is worked upon the Pear, or standard stock. Working Apple scions upon Paradise stock induces a diminutive growth. Working Cherry upon Mahaleb induces a growth not so much dwarfish, and I think there is some impropriety in applying the term dwarf to that. Working Plum upon the wild Plum stock produces a tree somewhat dwarfish. Simply pruning a tree low does not thereby render it a dwarf tree, because such pruning does not tend to the diminutive growth or increased fruitfulness I have spoken of.

Mr. Bloss, of Monroe county, understood by the term "dwarf" a tree worked upon a shrub, or upon that which partakes of a shrub in its character, and thus the tree becomes divided in its character between the tree and the shrub.

Mr. Ellwanger differed. Tall trees are called standards always, and of old times, no matter how or on what they are grown. Dwarf means bushy, no matter what cause has rendered them bushy.

Dr. Bristol, of Livingston county, on the other hand, thought that, for instance in the Pear, a dwarf means the tree worked upon the Quince stock, and asked, "If a nurseryman gets an order for a hundred dwarf Pear-trees, what would he put up? Would it be merely a large tree cut down low? or would it be, as I have said, trees from Pear scions worked upon Quince stocks?" Trees (in grounds) which are kept to produce samples of varieties of fruits are "specimen" trees, and are not necessarily standard trees.

Mr. Barber thought we ought to have these arbitrary terms settled and made clear, so that all persons should understand the terms alike. A standard tree is a tree worked upon a similar stock; while a dwarf grows from a scion worked upon a similar *variety*, or species, of stock, but which is, in fact, a dissimilar stock. You may make a tree grow dwarf by cultivation and pruning, even as the Chinese dwarf the sturdy oak; but these are exceptions.

After remarks to the same intent from Messrs. Smith, Fish, and Herendeen, the Society passed to

Ques. 8.—What influence has the stock upon the graft in modifying or changing the quality of the fruit?

Mr. Sharpe spoke; and then—

Mr. Brooks remarked, that more attention should be paid to the manner in which trees were propagated; for we often see the same variety of apples which, growing upon different trees, have not the same flavor. Certainly, the best scions are taken from vigorous trees, and the same rule will apply to stocks. The character of any stock, or of any bud, will perpetuate itself as well in plants as in animals.

After remarks from Messrs. Ellwanger, Barber, and Langworthy, who agreed that there was a strong analogy between vegetable physiology and animal, the further consideration, was

on motion of J. Vick, Jr., postponed until next meeting, and members were requested to prepare themselves for the discussion.

Ques. 9.—In transplanting trees, is pruning the tops and roots of importance? and if so, under what circumstances?

Dr. Beale thought this an important matter.

Mr. Barber.—In taking up trees, we should take up all the roots we can. Injured roots should be examined, and the injured parts cut away. Where the roots are thus pruned clean there are more small roots thrown out from the pruned roots than from roots less mangled. The top should be pruned to correspond, for the top of the tree is the demand, and the rest is the supply. Do not prune the top too much; for it can be so severely pruned as not to leave wood-buds enough to demand and draw up the sap from the roots.

Mr. Hooker thought that other things, such as soil, manure, &c., were of more consequence. There is a wonderful power in nature to recuperate the strength of plants; and fruits have a strong power to adapt themselves to circumstances. It is astonishing how readily trees will adapt themselves to the places where they are situated. Has tried experiments, and the growth of the trees that were pruned was greater than that of those not pruned; but the total top amounted to only about the same. As an abstract question, a great deal is to be said on both sides. Mr. Hovey thinks the pruning should be done the year after transplanting, and others think we should prune *when* we transplant. There are various ends to be served by pruning. If we want the plants to bear fruit immediately, we prune in one way; we prune in another way to produce a bushy tree; in another for a pyramidal tree; in another way to grow a larger tree.

Mr. Herendeen said that John J. Thomas once tried the experiment of these different modes of pruning the tops upon the same sort of tree, leaving the roots all alike, and all growing under similar circumstances. Where not pruned at all, the trees made little if any growth. Where the tops were pruned moderately, the trees grew somewhat, sending out shoots five or six inches in length, and looked decidedly better. Where the tops were pruned severally, the trees grew thrifitly.

Mr. Barry suggested that these nurserymen's experiments at home were not upon trees which are like the trees that reach their customers, and we must not be guided implicitly by them; but would recommend that in all cases the tops should be reduced a good deal. We import trees from France which reach us with tops dry and shrivelled, and we always prune them in, and these trees go on with their growth. The late A. J. Downing impressed upon tree-planters the importance of pruning the head of the tree. We all know that little trees will grow well, and the manner of pruning their branches depends upon circumstances; but, at any rate, all dry and dead roots, as well as all dry and dead branches, should be cut out.

Mr. Barber.—The roots should be placed in the earth, not in wads or bundles, but spread out as nearly as possible like they grew, and every dry or dead part, or decayed portion of either a root or a branch, should be removed under all circumstances.

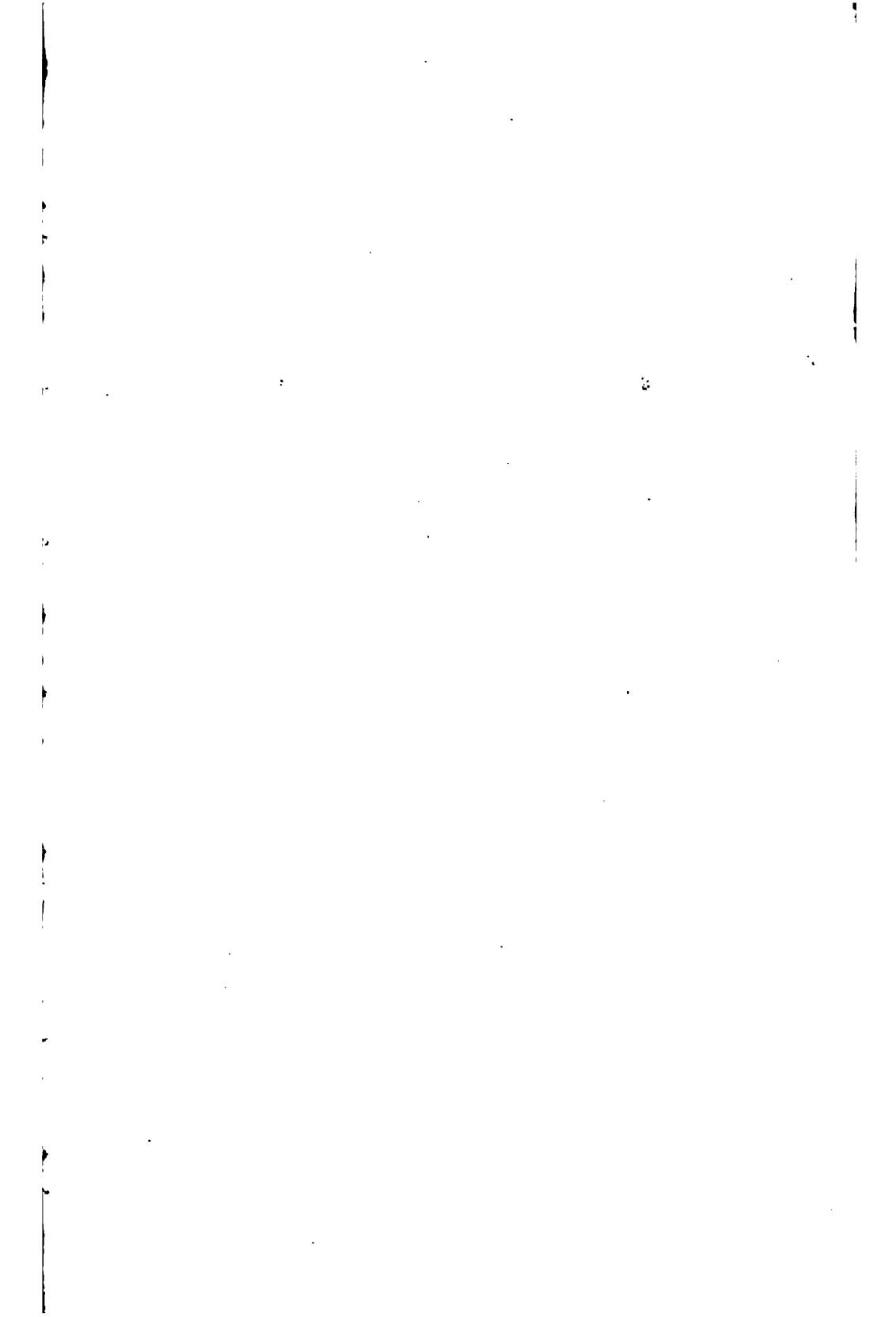
Mr. Herendeen suggested that these fine fibres and wads of roots spoken of are almost always dead; and if we examine trees, we shall find that all the new growth of the roots is from roots fully the size of a pipe-stem.

Mr. Sharpe spoke of transplanting dry yearling Peach-trees, and cutting off *the whole* top, leaving the stumps only twelve to twenty inches in height, and they all lived and grew.

Mr. Langworthy remarked, that injudicious pruning might damage trees and plants; but close, careful pruning, when transplanting, does not destroy trees.

After some further desultory discussion, the Society adjourned, to meet in June at Syracuse.

[The proceedings, we are glad to learn, will be published, and may be had, we presume, on application to Secretary Bissell, Rochester, N. Y.





NOTES ON THE CULTURE OF

the *Aspergillus* Fungi.

The genus *Aspergillus* is one of the most interesting and important groups of fungi. It includes many species which are of great interest from a medical, agricultural, and industrial point of view. The species of *Aspergillus* are characterized by their ability to produce a variety of secondary metabolites, including antibiotics, enzymes, and pigments. They are also known for their ability to decompose cellulose and lignin, which makes them important in the paper and pulp industry. The genus *Aspergillus* is widely distributed and can be found in various environments, such as soil, decaying vegetation, and on plant and animal remains. The study of the *Aspergillus* fungi has led to significant advances in our understanding of the biology and ecology of these organisms, as well as their applications in various fields of science and technology.

The *Aspergillus* fungi are heterothallic, meaning that they require two different mating types (A and B) to reproduce sexually. The A mating type is typically represented by the *A. fumigatus* species, while the B mating type is represented by the *A. nidulans* species. The sexual reproduction of *Aspergillus* involves the formation of ascospores, which are produced in specialized structures called ascocarps. The ascospores are released from the ascocarps and can germinate to form new individuals. The life cycle of *Aspergillus* includes both asexual and sexual reproduction, with the asexual stage involving the formation of conidia (conidiospores) and the sexual stage involving the formation of ascospores.

The *Aspergillus* fungi are known for their ability to produce a variety of secondary metabolites, including antibiotics, enzymes, and pigments. These metabolites have numerous applications in medicine, agriculture, and industry. For example, the antibiotic penicillin is produced by the *A. fumigatus* species, and the enzyme cellulase is produced by the *A. nidulans* species. The pigments produced by *Aspergillus* fungi, such as ergosterol and ergotamine, are used in the pharmaceutical industry. The *Aspergillus* fungi are also used in the production of food products, such as cheese and bread, and in the production of biopesticides.

The *Aspergillus* fungi are important in the field of biotechnology, particularly in the production of enzymes and antibiotics. The ability of *Aspergillus* to produce a wide range of metabolites makes it a valuable tool for the development of new pharmaceuticals and industrial products. The study of the *Aspergillus* fungi continues to provide valuable insights into the biology and ecology of these organisms, and their applications in various fields of science and technology.



Hints on Grape Culture.—III.

AVING selected a proper site for the vineyard, and examined the nature of the soil, it becomes important next to prepare it for the reception of the vines by some thorough mode of preparation. There is, naturally enough, some difference of opinion as to what should be considered a thorough preparation of the soil, what is esteemed good preparation by one being regarded by another as very indifferent work. We may say, however, that all experienced vineyardists are agreed that the soil should have some considerable depth, and be properly enriched. The results will correspond with the preparation. We have already insisted that moisture in excess should be got rid of by underdraining or otherwise, the best mode of doing which will be considered in a chapter by itself; we shall also treat separately of *manures* and *composts*; the present article, therefore, will be confined to the mechanical operations necessary in preparing the soil.

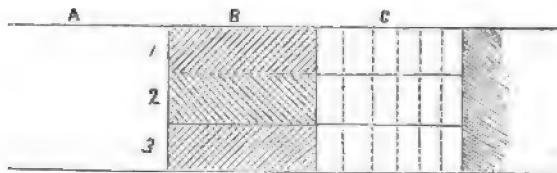
The *depth* to which the soil is recommended to be prepared by different writers varies from almost nothing to *five* feet or more. We very much doubt the necessity of preparing the soil to this great depth, except under very peculiar circumstances; insisting upon such needless extremes, moreover, has proved a great drawback to a more general cultivation of the grape as a source of profit. We always insist that all work in Horticulture shall be done in the most thorough manner, but we have no faith in works of supererogation; and there is nothing in our experience or convictions to favor these excessively deep borders; on the contrary, we believe them to be, as a general thing, an evil, in as far as they are not indispensable to the health and fruitfulness of the vine, and their great cost frightens the great mass of people from the cultivation of the grape at all. The point we make is this, that borders five feet deep are not in the least necessary, under ordinary circumstances, for the production of grapes of the very best quality. We shall show, hereafter, that the roots which make the best fruit are usually about four inches beneath the surface, and it is quite possible to keep them there. We, notwithstanding, consider a reasonably deep border quite necessary, not only for the health and longevity of the vine, but to counteract the disastrous effects of drought, and heavy, long-continued rains. On this point, our general rule is, *maximum* depth, *three feet*; *minimum* depth, *eighteen inches*. There may be occasional exceptions to this general rule, but the nearer the approach to our *maximum* point, the more satisfactory will be the results.

Some soils will require more mechanical manipulation than others; as, for example, a stiff clay will need to be more thoroughly stirred and broken up than a sand or light loam. Both, however, should be worked and enriched equally deep; the capillary powers of both should be made as nearly equal as possible. The labor of accomplishing this purpose, however, will be much less in the one case than the other. What we wish to impress upon the reader is this, that *thorough preparation* is indispensable, no matter what the nature of the soil may be.

There are two modes of preparing the ground: the one is called *trenching*, the other *subsoiling*; the first being usually confined to the garden and small plots, and the latter to the vineyard or field. Subsoiling is a less perfect mode of trenching, and is a cheaper and less laborious operation. Trenching is performed by the

spade; subsoiling by plows of different kinds. In all preparation of the soil, the nearer it is brought to the condition of trenching, the better.

We shall first describe the operation of *trenching*. This, though quite a simple operation, and well known to the gardener, is very imperfectly understood by the great mass. We shall endeavor to make it so plain that all may comprehend it. We will take, for example, a piece of ground to be trenched three feet deep and six feet wide, of which the figure appended is a section, on a scale of a quar-



ter of an inch to the foot. A, B, C denote the surface, B, C being divided into two equal parts of three feet each. The figures, 1, 2, 3, denote the feet in depth. Begin by marking off with a garden line the section B, three feet wide, along the length of the border; then remove the earth from B to the depth and width of three feet, as shown by the shaded lines, and throw it upon A. We now have a trench three feet wide and three feet deep the whole length of the border. The next operation is to transfer the earth of the section C into the trench B. This is done in several ways. The usual practice is to take the top soil, indicated by the figure 1, and place it in the bottom of the trench; on this is put 2; and on the top of all 3. The effect of this is to place the best soil at the bottom and the poorest at the top, to which there are some serious objections. A better way is to take small sections from top to bottom, as indicated by the dotted lines, which has the effect of thoroughly mixing the soil, and making it of uniform texture throughout. While the operation of trenching is going on, the compost must be mixed with the soil. Though we have shown only two trenches, the operation is to be continued by marking off three feet more and throwing it into C, and so on till the work is done, the earth thrown out at A being used to fill up the last trench. If the trenching is to be two feet deep instead of three, the operation is substantially the same, as will be quite apparent. A good plan, in trenching two feet, is to loosen up a third foot without throwing the earth out.

We usually, however, pursue a method somewhat different from the above. Spring a line and mark off a trench four feet wide. Then begin by digging a hole four feet wide and six feet long, throwing the earth out on the side not to be trenched. The operation is continued by cutting down the earth from top to bottom, (as indicated by the dotted lines in the figure,) and placing it at the end of the hole just made. The operator stands in the trench; and as he works before and throws the earth behind him, he always has sufficient open space to stand in. The sides of the trench must be kept perpendicular. When the end of the trench is reached, another, four feet wide, must be marked off parallel with it. The unfinished end of the first trench is then filled in from the second trench, and the latter is worked along like the first, and so on back and forth to the end, when there will be a hole, about four feet by six, to be filled up by the earth thrown out at the beginning. The trenching may be begun by a hole of any convenient size. Some of the advantages of this method are, that the men (part in the trench and part out) can labor to greater advantage; the earth is more thoroughly pulverized

and mixed, and the compost more completely and easily worked in ; and there is little wheeling of earth.

We will now describe the other mode of preparing the soil, called *subsoiling*; and we again remark, that, in this operation, the more nearly the soil is brought to the condition produced by trenching, the more satisfactory will the result be. The implements to be used are the common plow and the subsoil plow. For heavy soils and sod, the Michigan plow is a good one ; for ordinary soils, the improved Eagle and the Knox plows are efficient implements. Of subsoil plows, the Lifting Subsoil is the best. For side-hill work, a left-handed plow is best, unless the off-hand ox should be a very tractable animal. Different individuals, however, have their preferences in the matter of plows, and each may indulge his preference, provided the work be well done. What is wanted is a surface plow that will turn and mix the soil a foot in depth, and a subsoil plow that will stir it at least a foot more ; the deeper the better. The compost is first evenly spread over the surface. The surface plow is then to be put in, and the subsoil plow is to follow it immediately in the same furrow. In preparing a vineyard it is desirable to avoid dead furrows ; and this is done by turning the furrows all one way, which involves the necessity of returning without a furrow. Unless this is done, it is better to plow around the lot than in "lands." To enrich the soil deeply and thoroughly, it is a good plan to have a cart follow by the side of the first plow, and throw some compost in the furrow, in front of the subsoil plow. If the plowing is done in the fall, the land should be left rough, to be acted on by the frost. If in the spring, and it is not intended to plant at once, a hoed crop may be grown with advantage. Where the time and labor can be afforded, the land may be plowed and cross plowed two or three times with decided benefit. The object is to get the ground into as fine tilth as possible. The best implement that we have seen for pulverizing and mixing the soil is Mapes's Digging Machine. This, run through the soil once a fortnight during the summer, will reduce it to the fineness of good garden soil. The best harrow to use is one with "cultivator" teeth.

Side hills, if very steep, will have to be terraced by manual labor. The terracing may be done by cattle, however, more cheaply in all other cases. The ordinary side-hill plow is not stout enough, works too shallow, and mixes the soil imperfectly. A narrow, deep left-handed plow is probably the best thing that can be used in terracing. The furrows must all be turned down hill, the plow returning in the same furrow. There will always be some finishing to be done by hand. The walls may be made of stone or sod ; on steep hills, however, stone walls are quite necessary. We are trying a new plan, which we think will save no inconsiderable labor, but have not progressed far enough yet to speak confidently. We aim at the same object in terracing hillsides as elsewhere, the formation of a deep, well-prepared border for the vines. The work presents more or less difficulties, according to circumstances ; to describe fully the process of forming the terraces would require an article of itself. We have indicated pretty clearly what is to be accomplished, and hinted at the best mode of doing it. We are ready, however, to give any further information that may be asked for.

The reader must remember, that in preparing a border or a vineyard, he is doing something, not for a day or a year, but for a century, and the preparation must be correspondingly thorough. We put corn and potatoes in the ground, and in the short space of a single season enjoy their full fruits, the process to be annually repeated. We plant a vine, and, provided it be well planted and wisely cared for, generations unborn may partake of its luscious fruit.

LANDSCAPE ADORNMENT, NO. XI.—ORNAMENTAL WATER.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER 29 BROADWAY, N. Y.

THERE is nothing in the whole range of materials made use of in Landscape Adornment that is so effective, attractive, and beautiful as water, and wherever it can be had at a reasonable expenditure, it may be considered as adding to the value of property beyond most other recommendations.

Water, in the natural form of Lakes, is not so frequently met with as to afford all an opportunity to enjoy or display it; and if desired, it becomes necessary to imitate nature in this respect, wherever she has given us the hint to do so. In the natural style of Landscape Gardening, artificial water, either in lakes, ponds, or streams, requires a treatment entirely different from that prevailing in the old school; regular forms must be entirely disregarded, and we must pursue our studies among the picturesque forms of nature. There is that which requires an intimate knowledge of natural forms, as well as natural effects—a pretentious imitation being worse than that which plainly shows, both in design and construction, there is nothing natural about it. If we take as models of study the most graceful or the most beautiful natural examples of lakes, and attempt their reproduction, we would be early convinced that any exposure of the manner by which we arrive at results would be fatal to success: the art by which we attain our wish must be concealed, the well-finished masonry being no compensation for a pebbly beach. Perhaps the most difficult part to be attained in the formation of water in the natural style, is the shape or figure. The contour or boundary lines must be such as will show no repetition, and must also create the impression that they have been produced by the wash and wear of time. There is also another impression to be created, and for which we can call to our aid a numerous variety of natural examples. This last is extent—the ability to make the most of what can be had—to double the apparent size. It is a well-known fact, that we cease to take an interest in anything that the eye commands at one view, and which, if viewed from different points, presents no change or variety. There should be a temptation to investigate, and in all changes a new vista be opened, or a new picture presented. We should therefore so contrive the form of water, that in no one or even two positions that could be taken, should its entire outline be seen; and this can readily be done by irregular shapes of water, and which are made irregular by the very objects that we introduce to intercept the sight. If a point be high, that will answer our purpose; if low, we must plant. The introduction of an island is sometimes of value, not only as a pretty feature, but as the means of concealing views beyond, which are more beautiful seen from another stand-point; whatever is defective must be covered up, and all that is beautiful be plainly shown.

Being familiar with all natural shore-lines, and the action of water upon them, the first step towards their reproduction is to ascertain what forms are most applicable and the least expensive. We must therefore know the natural shore-line that would be indicated, by flooding the site of the proposed pond with water, if the pond be raised. This can be ascertained with the utmost accuracy by a topographical survey; that is, the level of the proposed surface of water being given, the outline of the shore can be indicated by a leveling instrument, and all the points and indentations marked out: when this is done, the shore-line thus found is to be meandered either by a compass, or transit, or by measuring offsets from a base-

line, or from parallel lines. The plan of the pond, as it will naturally form, is then to be plotted, and we have an exact representation of its shape on paper. This being done to a scale, enables us so to vary the outline as will introduce the most pleasing variety, and the changes thus made on paper can be measured off by the same process on the ground. It is sometimes advisable to make two or three such examinations—say one at one foot below, and another one foot above what appears to be the best level for the surface of the water, as it is a very common occurrence to find suggestions of beauty in a survey thus plotted, which, on the ground, the eye has condemned. Having the outline of the proposed pond transferred to paper, with two or three different outlines that may be suggestive of other good forms, it enables us to study out, on our library table, the merits and demerits of the case. It is also desirable that surrounding objects, such as rising ground, trees, etc., be placed upon the plan. Then, from different points of sight, lines should be drawn, diverging from the eye, and embracing all that is desirable to be shown. By this process can be indicated the position of intervening objects, and it will show, when the work is done, the limits of a view from any point. In addition to a plan, several profiles of the bottom should be taken with a leveling instrument—one or two lengthwise, and perhaps three or four across; these will show exactly the depth of water at all the principal points, and from them can be estimated what amount of excavation shall be required to make the pond deeper, if greater depth be necessary. It must be evident, that a survey of this kind will show the outline of the pond when flooded, and the profile, the soundings or depth of the water at the required points, and all this can be ascertained with reliable accuracy, without meddling with the water. It may prove when a meander is plotted that no alteration is necessary, or it may show that very great changes can be made by a very little work. It will always show how the most beautiful effects can be produced, and the best and most economical manner of producing them. Where a pond is created by excavating the earth, instead of flooding it, a somewhat different process must be employed; the meander then to be made would inclose that surface which would be the most economical to remove, embracing, perhaps, the low, wet ground that winds around or is hemmed in by the hard land. From this plan could be studied all changes necessary to give a handsomely indented shore, or a pleasing variety of views.

As the natural style of Ornamental Water does not contemplate the use of masonry, either laid in cement or laid dry, except where it is all concealed, it must consequently be considered as out of keeping if exposed. Masonry is necessary in constructing durable dams, and we may as well state that where used for this purpose the arch should be sprung against the water, or curved up stream in such a manner that the water presses against the back of it; if curved the other way, as is sometimes done in making oval ponds, there is nothing except the mere strength of the wall to resist the pressure, and it is likely to be carried away in a flood. This wall, by which the water is retained in the pond, may be entirely concealed by an embankment of earth, which may be made wide, and planted in such a manner as to destroy all artificial appearance. Flooded ponds, as a general thing, hold the water, and there is no leakage through the bottom. Those that are excavated may expose a bed of gravel, and the water percolate and pass off; to remedy this, and all other cases where the ground will not hold a body of water, the bottom should be thoroughly puddled, that is, lined with well-kneaded clay, or clay and sand worked together until they are impervious to water; this should be well rammed, and of a depth of not less than six inches, and on very bad bottom should be more. Strong loam, or any tenacious earth, well prepared

by puddling, or beating in water, is said by Mr. Downing to be as impervious to water as clay, and may therefore be used for lining the sides or dams of bodies of made water, when such materials are required. The edges or shores of a pond thus treated are more beautiful, and practically as durable as masonry. They should gradually grow deeper from the shore-line; if abrupt, the frost will crumble them down, and children and cattle are more likely to tumble in. The beach may be graveled, or, if preferable, the lawn may run to and underneath the water.

In formal ponds, whose outlines are regular, and require to be carefully kept so, it is necessary to have a wall around them; they are more beautiful, however, if the coping be left off, and the sod carried over to the face of the wall. Unless these walls be strongly built, the frost is very apt to heave them; they are like retaining-walls, or terrace-walls, having the earth on one side up even with the top, and should be carefully avoided in all that appertains to the natural style of Landscape Adornment.

PRACTICAL THEORY OF FERTILITY.

BY BENJAMIN AYCRIGG, PASSAIC, PASSAIC COUNTY, NEW JERSEY.

THE chemical condition of a soil necessary to fertility (when reduced to its lowest terms, after separating the adventitious by means of a comparison of the reports of a great many analyses of soils, and of plants, and experiments with various fertilizers) appears to be this: The soil must contain silica, alumina, peroxide of iron, lime, magnesia, potash or soda, humic acid, and at least one of the three mineral acids, viz., phosphoric, or sulphuric, or muriatic. Also, there must be no salts of the heavy metals; also, the alkalies must be balanced with the acids, so that neither shall be in excess, thus making the soil exactly neutral.

The reduction by chemical equivalents of a great number of analyses of soils reported, both good and bad, has proved to me that *neutrality* is the most distinguishing characteristic of a fertile soil for ordinary field crops. This neutrality can be produced and made permanent without a previous analysis, without danger, at the smallest expense, and with exact precision, by pure lime, (or such as contains no magnesia,) in excess of all the acids in the soil. At the same time, this excess decomposes all the poisonous salts of the heavy metals, and makes them valuable fertilizers. It also liberates potash, and soda, and phosphoric acid from their compounds. The remaining excess of lime becomes a carbonate, as chalk, laid by in store; neutral and inert while not required, but still ready to neutralize any future increase of acid. Pure lime is the only substance that can be used artificially to produce these results. In natural soils this neutrality is produced by any of the four inorganic alkalies.

The above chemical conditions necessary to fertility can be produced by the five following simple, cheap, common applications, provided the ground be a fair *loam*, (or mixture of *sand* and *clay*,) and contain the ordinary amount of iron in any soluble form, although at present it may render the land barren by its poisonous condition as sulphate or phosphate. The proper quantities of the various applications must evidently vary according to the present condition of the soil. These can be ascertained by each culturist for his different grounds, by varying the amounts and noting the results. As a preliminary experiment, I suggest such

quantities as I suppose will answer where the same substances are deficient in the soil, and at the same time not produce injurious excess where they are abundant at present.

1st. *Pure Lime in Excess*.—One large application, to make an artificial limestone soil as a basis of operations, say 200 bushels per acre for ordinary land, and thence increasing, with the vegetable matter in the soil, up to 1,000 bushels or more for a drained swamp. The only danger in this application in excess is from magnesian stone lime. Shell lime is pure. A bushel measure means slaked, struck.

2d. *Magnesian Stone Lime*.—A moderate quantity as food, every three or four years, say 50 bushels, and not to exceed 150 bushels, even for rich land.

3d. *Gypsum* (plaster).—To supply sulphuric acid, say three bushels every three or four years; otherwise, twice as much "salt-cake."

4th. *Common Salt*.—To supply chlorine (muriatic acid) and soda, say six bushels every three or four years.

5th. *Decomposed Vegetable Matter*.—If in the form of barn-yard or other fermenting manure, it should not be applied within some months, either before or after fresh lime. An excess of fresh lime will expel all the ammonia from fresh manure, or any other ammoniacal compound, as guano, etc.; but if the vegetable matter be in the form of muck, or mud, or sods, or pumice from cider-mills, or rotten wood, bark, tan, or sawdust, then it should first be composted with lime to neutralize the acid before it is applied, unless it be for acid plants, as strawberries, cranberries, etc., where lime is said to be injurious, although necessary for field-crops and for fruit-trees.

Three of the inorganic constituents of plants are not supplied in the above, on account of the expense, viz., manganese, potash, and phosphoric acid. They may all be abundant, even in a barren soil. They may all be liberated and brought into use by the excess of lime; or they may all be absent. In this condition we have evidence that we can have fertility without them. Thus manganese does not appear to be necessary when there is an abundance of iron. Potash is at times replaced by the other alkalies, lime, magnesia, and especially soda, which is almost identical with potash in its chemical action. Soda we apply in common salt, and also in salt-cake. Phosphoric acid is at times replaced by the other acids, (in a great measure at least.) We have humic acid in the vegetable matter, sulphuric acid in gypsum or in salt-cake, and muriatic acid (chlorine) in common salt.

It is, doubtless, better for plants to have a supply of every thing; and after the cheaper substances have been fully tried, then apply the more expensive fertilizers, and ascertain whether the increased fertility will pay for the increased expense. But in many cases they will now be found useless. Thus, the benefit from wood-ashes, soda-ash, potash, fresh manure, Peruvian guano, is frequently due solely to their alkaline action in neutralizing an acid soil well supplied with inorganics. This neutrality has already been produced by lime. So, again, where the soil contains sufficient phosphoric acid, the superphosphate of lime will have no effect, since gypsum gives us lime and sulphuric acid, the other two ingredients in super-phosphate of lime.

For a partial improvement, magnesian stone lime is better than shell lime. It is cheaper per bushel, still cheaper per pound, and much cheaper in proportion to effect, since magnesia is more powerful than lime as 4.83 to 3.50. At the same time, it also furnishes magnesia as a food preferred by some plants. Thus the grain of Indian corn contains ten of magnesia to one of lime; but it can not be

used freely, since an excess of burned magnesia will render the land permanently barren from excess of permanent alkali, unless counteracted by some acid, as fresh muck or old manure. Pure lime, on the contrary, soon becomes "mild or carbonated, as chalk, when freely exposed to the air, and hence may be used" in almost unlimited quantity, without any permanent injury. It is only a waste of money and a waste of time until the large excess becomes mild.

The proposed excess of caustic lime will be advantageous in an open field, to kill off all plants, including weeds, and thus prepare it for the new crop as soon as the lime shall have become mild; but it would also kill trees, and render a garden useless for a time. Therefore, in these cases, we can not use the excess necessary to decompose minerals, and must confine the liming to the sole purposes of producing neutrality and of supplying food. This may be done by frequent small applications of fresh lime, or by one large application of carbonate of lime in the form of shell marl, or ground shells, or chalk, or old mortar, or old walls, or scrapings of limestone roads, or rotten limestone, or pure lime exposed fully to the air until, when stirred in water and allowed to settle, the water does not taste of lime.

The organic constituents of plants, or those elements originally derived from the air, are carbon, nitrogen, hydrogen, and oxygen. In fresh manure, ammonia is in excess, from the decomposition of the nitrates contained in the food. But after those have been exhausted the manure rots down the same as muck, etc., successively into ulmic, humic, geic, crenic, and apocrenic acids, (garden mould,) composed exclusively of carbon, hydrogen, and oxygen in different proportions. At each step, the air is decomposed; the nitrogen joins with the hydrogen of the earth acid, forming ammonia, while the oxygen joins with the remainder of the earth acid and forms carbonic acid gas, when the earth acid drops to the next grade. Hence a good supply of the roughest vegetable remains will for a long time furnish ammonia, the most valuable and evanescent ingredient in Peruvian guano. This ammonia from muck, on the contrary, forms most when most required, increasing with the heat of summer, becoming quiet in winter, to be aroused the next season for the next crop. I have no positive authority that the air is exactly thus acted on, but I give it as an hypothesis that will explain the power of humus to "absorb" ammonia from the air, and at the same time account for the various chemical transformations among these earth acids that do not appear to be agreed on among chemists. Thus Liebig says, "The humic acid of the chemists is the product of decomposition of humus by alkalies. It does not exist in the humus of vegetable physiologists." Now, I found that a specimen of soil taken from a hedgerow, and composed mostly of rotted sods, and very prolific in sorrel, would neutralize 19,000 lbs. of slaked stone lime, if this soil covered an acre of ground eleven inches deep, while the same amount of soil, imperfectly burned, required but 3,000 lbs. Thus there is in this soil a vegetable *something*, capable of neutralizing 16,000 lbs. of lime per acre.

I propose to the horticulturist to try the experiment whether muck neutralized by lime will not answer in place of guano. If so, he will not care whether wood rots down into humus or humic acid; nor yet whether ammonia is thereby collected *from* the air, or formed by decomposition of the air. Again, we might infer from Liebig that decomposed vegetable matter is not necessary. His argument may be sound, but I prefer to imitate the fact, that decomposed vegetable matter is invariably reported in all fertile soils, although it may be the consequence, and not the cause, of fertility.

Again, some of the most intelligent and scientific culturists object entirely to

the use of magnesian-stone lime. If they are right, the second application should be replaced by pure lime, since an occasional liming is found beneficial, even on rich limestone soils. I have seen land rendered permanently barren by magnesian lime, but only by excess. I have also seen whole districts raised to fertility by its use, and have used it largely myself in Pennsylvania, where they do not exceed 25 bushels per acre for poor land, and 50 bushels for rich land. They calculate fresh heaped measure. This would make about 75 and 150 bushels slaked, struck.

The chemical proof of the above would occupy more space than you can devote to any one subject. The best proof is a practical test by a few judicious culturists. This they can do on a small plot, and ascertain whether it deserves the name of theory, at a very small part of the labor that it has cost me to collect and analyze the facts upon which it is founded. If true, it is important; if not true, let us have the objections, that something better may grow out of it.

[The above is from the pen of a gentleman well known in the scientific world; an original thinker, and a pains-taking experimentalist. The article itself is an admirable specimen of condensed thought; there is not a superfluous word in it. The theory propounded conflicts in several material points with that of Liebig and others, but is sustained, in our opinion, by many facts and probabilities. It will no doubt bring forth a response from some of our readers. We would direct special attention to Mr. Ayerigg's suggestion in reference to the experiment with muck. We venture to say that the result will surprise many. We have not a doubt that vegetable matter is a source of fertility, Liebig to the contrary notwithstanding, and a very important one. Let Mr. Ayerigg's experiment be carefully tried, and the result as carefully noted, and we shall reach some important facts.—EDITOR.]

T W O S E C R E T S .

BY FOX MEADOW.

MR. EDITOR:—We don't know whether you are as good a hand in keeping secrets as the ladies are; but we suppose that we can trust, in confidence, all secrets on horticultural subjects very safely in *your* hands. When men begin to think that they know something "of something" which no one else knows any thing about, they are very careful how, when, and where, they speak of the darling treasure wrapped up in the bottom corner of their large hearts. Now we have just two secrets which we want to tell you; and as we have written secrets a long while ago to you, and you have been kind enough never to divulge them, we are going to entrust you with two more.

You have often told me how fond you are of growing grapes, and that you are making more new vineries. New borders with lots of new ideas, and new theories. What wonderful preparations there are every day made for the vine; how borders are compounded by the drachm and scruple; how deep they are made, and how shallow they are made, and then after making so shallow, how thick a mulching is necessary on them to keep the sun from burning up their poor roots. How borders should be drained, not merely for the sake of taking off water from wet bottom lands, but to show how ingenious some inventors are in

filtering away all the precious nutriment which has cost so much money in these vine borders. It is a great pity, sir, that we have not got some vine borders formed within glass cases, so that we could see the precious little root at work like bees in a glass hive. If we could only construct a border like this in some secret spot out of sight, where we could enjoy the sight ourselves of watching the transactions of the little roots as well as the big ones, what a sight we should see! Can't we imagine something how it would be? A border two feet deep, half rotten dung, with two feet of broken stones or oyster-shells in the bottom, and drain cut across the bottom besides; and then a large main drain which must be large enough not to entertain a doubt of its capacity in carrying off a volume of water nearly large enough to drive a grist mill! A border of this sort must be full of vine roots, certainly it must! With all these good things in it, it is bound to be full of roots; but if we had only got the glass case, we could see all about it, and we should see very few of the roots in the border. When you put a strong growing plant into a pot, the first thing done is to make a good rich compost, with plenty of good rotten dung; yes, and then the next thing is to have plenty of drainage; yes, the pot one-third full or nearly so. In three months' time after potting—and the plant lives and flourishes good—turn this same plant out of the pot, and where do you find the roots? All through the soil in a mass? Not a bit of it; they are down in the bottom of the pot, wound round and round, sucking up the essence washed out of the beautiful compounded compost. So are the roots of these vines in these filtered borders. There is a vast difference between *draining* a border and making it a *filter*. A drain cut all around the intended border, and sunk twelve inches below the bottom surface of such border, in most instances is all that is needed, with a proper outlet for water. *Stagnant* water, let it be ever so little in the bottom, is very destructive, and a *filtered* border is no better.

Much has been said of vine borders, a vast amount of money spent on them, and many books written on the same subject, but who has written about the **VINE PLANT**? Who has told you, my dear sir, that the great important fact, the ultimate of all compounds—the perfection developed out of all borders—depends upon the *healthy organization of the plants put in them?* You may just as well tell me that a gorgeous mansion, decorated with all the splendor and magnificence of wealth, will restore health and strength to the broken down, emaciated constitution and that its glittering walls will re-invigorate the broken spirit, and re-instate the body with joyful health. Our knowledge of the laws of the animal creation teaches us a different tale. When once the vital fluid of this animal organism becomes checked, pores contracted, channels contracted, cankered, and weakened, it takes a mighty power to drive it through again, in its original gentle-flowing streams. Splendid palaces may be created for the broken down constitution—a toy to please the spirit passing away—but they can never build up health. So with your palace vine borders; stuff them as you will, gorge them as you will, filter them as you will, concrete them as you will, make them *inside* or *outside* as you will, *you will never produce a good sound bunch of grapes from vines having a broken down constitution.* This we call your attention to as **SECRET NUMBER ONE.**

You may ask me, "What is meant by a broken down constitution in a young vine?" We answer, dying in a five inch pot for two years before it is sold for planting into some palace vine border, for the *enormous sum of fifty cents.* This, by-the-by, is getting to be an outrageous price for grape-vines; some folks, however, are getting more rational, and are quite willing to sell them for *twenty-cents each.* Would you like to know what I consider a good sound constitution in a

young grape vine to be? I think I can hear you *laughing*, yes; so I will tell you. Grown from an eye into a cane six feet long, and one quarter of an inch in diameter at the end of that six feet, in six months' time, thoroughly ripened, the leaves turning naturally yellow, and dropping off because they have fully done their duty; and having plenty of roots as large as the cane itself, and equally as long. Do you not think that it would be a far better policy to save some of that useless money spent in making the palace border, and add a dollar to the price of the vines? You may think me, perhaps, rather dogmatical when I tell you that no vine is worth planting unless it comes very near to the standard given, and that we should much prefer giving two dollars each for such plants, than we would be willing to give one cent for the former class. We place far more dependence on the kind of vine for planting than we do in the formation of the border. If we could get nothing better than some vines said to be *grown* for two years in pot, before we would plant such vines, we should be strongly inclined to grow them one season ourselves in pots or tubs, and get them into a proper condition for planting out. I do not deny that even weak, poor plants, will grow the first season after planted out in the border, and make as good canes in *size* as we could desire; but the chapter does not end here. We want the glass case again to see where the roots have gone to that such plants have produced. They are in the border, it is true, but if you could see them, they are nothing more than a lot of tap roots gone direct down to the bottom of the border; and our humble experience is, that many men have been stumbling all their lives against the *border* without ever considering the action of the root. This is a long subject we are getting into, but for the present we will not tax your patience further on this point; but if you are going to plant vines this spring, get such ones we have been describing, and Bacchus will crown you KING OF HORTICULTURE for all future time.

Now for the second secret we promised to tell you; and this lies in a little fact in the management of the vine, RIPENED WOOD. There are two fundamental principles in the successful cultivation of the vine never to be lost sight of, and which, in our opinion, stands first of all other considerations, namely, a fine strong healthy plant to start with, and a full determination to have all the wood such plants produce, thoroughly well ripened. There is a question now that naturally suggests itself, and that is, "How are we to know when such wood is thoroughly ripened?" You may answer me by saying, "When the wood becomes fully browned, and the eyes or buds plump and full." Ah, my friend, if this is all, it only shows your want of experience, for this much is often seen accompanied with green foliage. Wood is never ripened as long as any portion of a green leaf holds to the vine! Vines cut down by frost when the foliage is green *have not ripened* their wood. You may be satisfied, in your opinion, that they are ripened enough to sustain no injury, and that you will get a good crop the next season; but we tell you, emphatically, that every green leaf that falls off through frost, is so much less in the weight of your bunches of grapes the next season. To obviate this it becomes necessary to think and act intelligently. Growths must be measured and restricted, watched attentively at the latter end of the season, and checked or stopped accordingly; and if proper attention is given to the admission of plenty of air, after all tender growths are matured and hardened, much of the tendency to late growth will be avoided. There is much more difficulty experienced in preventing a late or second growth in houses *early forced* than cold houses, because the wood in the former gets ripened pretty well before the heat of summer sets in, and the heat and moisture thrown into such

borders induce a second growth in the roots of early forced vines, and starts them into a second, or what we may properly call a *natural* growth. In this fact comes the tug of war. If the sap gets up and the vines make a growth, such vines for the next season are in a far worse condition than poorly ripened canes in a cold viney, and are liable to produce much less the following season. When such is discovered in early forced vines, it is much the safest and best plan to let the vines break again, and prune them in as soon as the second sap is fully up, and treat them in every respect the same as vines started early. This will do the vines no harm, but, on the contrary, do them good, simply because they will then get a season of *natural* growth which will much invigorate their constitutions. This act of second pruning, however, requires a positive knowledge of the exact time when it should be done. If done too quick, the vine so cut back will not break at all, and will stand over for the next spring, and when *then* put to work will refuse to move one jot where it ought to move, but will push out of the old wood at every possible point before it will break out of the young wood where it was cut back to, because the sap being stopped, and checked in green wood, has no perfected channels to work through. To guard against this second or late growth in forced vines, requires very rigid attention; and the growth should be checked back on its first appearance, for if allowed to grow a while, the power of the sap will overpower all mechanical operations with the fingers. The wood of all vines then, to be well ripened, is indicated by the leaves turning yellow as they do in the natural forests, and drop down of their own accord. We may then rest ourselves, assured that Nature has done her own work in her own way, and the bounteous supply given us the next season will teach us the truth, that no wood is well ripened but that which Nature ripens in accordance with her own natural law, and in this lies our SECRET NUMBER TWO.

[Editorially speaking, Mr. Meadow, we can keep a secret as well as a woman, "or any other man," and our readers have the best evidence of that fact right before their eyes. Send us all the horticultural secrets; we know how to keep them. Yes, we are fond of growing grapes, and we are putting up lots of new graperies, with inside borders too, properly drained; but *we* never *filter* them, Mr. Meadow; couldn't think of it. We *have* grown vines and other plants in glass cases, and seen such wonders as you would hardly believe. You are emphatically right about selling vines for *fifty* cents a-piece. No man can afford to grow a *first-rate* vine for that sum, let his facilities be what they may; yet poor vines will continue to be grown for that price, simply because the great mass will more readily buy a poor vine at fifty cents than a good one at a dollar, notwithstanding the latter is immensely the cheapest. We wish our friends would look that fact seriously in the face. We desire to see vines and trees put down to the lowest paying price, but we do not expect nurserymen to grow first-class vines or trees for nothing. Now we have kept your secret so well, Mr. Meadow, be encouraged to tell us some more.—ED.]



THE DELAWARE GRAPE.

BY D. S. HEFFRON, UTICA, N. Y.

MR. EDITOR:—I do not propose, in this communication, to settle the mooted question as to the nativity of this fine Grape; but as it has been grown within about four miles of this city for nearly eighteen years, I presume many of your readers would like to know how it came here, and what report we can make of its doings during all those years of probation.

A Mr. Foster first brought the Delaware to this county nearly eighteen years ago. He obtained the cuttings of a friend in Lambertville, N. J. After fruiting the vines for a few years, Mr. Foster changed his residence a short distance, but he reserved his vines, and took them with him, and has fruited them where he now resides for the last ten or twelve years.

That Mr. Foster's vines are true Delaware I do not ask you to believe on my word alone; for, in August, 1860, having a call from Mr. Charles Downing, of Newburgh, and the Delaware Grape king, Dr. C. W. Grant, of Iona, I had the pleasure of showing them one of Mr. Foster's Delawares, in fruit, in the fine grounds of the Hon. O. B. Mattison. These gentlemen both pronounced it the genuine Delaware by the time they were within ten feet of it. No further testimony need be added as to the genuineness of this Grape; but it may not be out of place to say, that when the fruit was ripe I took the trouble, for my own satisfaction, of comparing it with fruit that I had grown in my own grounds from Delaware vines that I had obtained from Dr. Grant, and I found them exactly alike *in every respect*.

Unfortunately the Foster Delaware has not been disseminated much, as its proprietor has been satisfied with having a few old vines, producing a better quality of fruit than any of his neighbors; and not knowing its true name until the fall of 1859, he has never propagated it, except a little by layering for the accommodation of his immediate friends.

And now what does this disinterested witness say of the Delaware during all this time that he has grown it? He showed it to me on an open trellis in his yard, and assured me that he had always grown the vines thus exposed; said he had never been in the habit of laying them down in winter; had never had the vines winter-kill so as to injure them; had never known them to mildew; if they had, he had never noticed it, and thinks he would have noticed it had it taken place. And, what will please us all, he said his Delaware had never failed to yield him a full crop of most luscious Grapes annually, that had always ripened before our early frosts.

It appears to me that no vine but a native, "to the manor born," could bear such a severe test as Mr. F. has unwittingly given the Delaware, and come off with such flying colors. The past season was a very trying one for vines in this section. The most of them grew late. The Isabella, Catawba, and others of the same class mildewed very badly, and did not ripen their wood as well as usual; but the Delaware ripened its wood as well as the Concord, and was not more affected by mildew. I saw no rot among the fruit of the Delaware, while the Concord was slightly affected by it.

It should not be forgotten that our winters are pretty severe, the mercury sometimes marking nearly 30 degrees below zero. On the morning of the 7th of February ult., the mercury was 27 below in the city, and 28 to 30 below zero in the country about here.

ON THE SYSTEM OF POT-CULTURE IN ORCHARD-HOUSES.

BY AN OLD-COUNTRY MAN.

THE Orchard-House has become an object of interest to many amateurs of late in this country, and to them some remarks on the cultivation of fruit-trees in pots, from an old cultivator, may not be devoid of interest.

The principles of good culture are the same in reference to all exogenous plants, but practical application of them under different conditions of cultivation is various ; arising from the diversity of climate, whether natural or artificial, to which we subject them, as well as from the mode of culture adopted, whether of confinement in the limited space of pots or tubs, or in the open border.

In orchard houses in England it is not unusual to adopt both modes, that of pot-culture and of open border culture, in the same house. That is not advisable in this country. It may be done successfully by a skilful gardener, master of his profession ; because he will know how to avert or to remedy any injurious result arising from the different effects which the two methods produce upon the trees subjected to them. But the tyro had better confine his system to one of the two ; and as pot cultivation is that for which these orchard houses were originally more particularly intended, it is to *that* system that the following remarks are intended to apply.

The first thing to be done is of course to obtain a suitable supply of large pots, not less than eleven inches in diameter, and others larger ; and a stock of healthy young trees.

Whether peaches, pears, or whatever kind is required, the most satisfactory mode for the amateur is, to grow the plants into the bearing condition himself, in preference to purchasing them prepared in pots in a bearing state ; because it frequently happens to the young horticulturist, that he, by mismanagement, destroys expensive specimens, perhaps without obtaining one crop from them ; whereas, if he grows them himself, he will assuredly learn much in the course of the operation, and his mishaps will not be so costly. This, of course, requires some patience ; and those who do not possess a sufficient stock of it, may, at the good nurseries, purchase trees of the various descriptions of fruit properly grown in pots for immediate bearing.

The great essential, to commence with, is suitable soil. This consists in good open loam ; not clayey on the one hand, nor sandy on the other. The former would be too stiff for the fibrous roots to work freely, and the latter would be too poor to grow a tough, sound wood, without which fruit of fine quality can not be produced. If the top six inches of a rich pasture can be obtained, a good heap of this laid up, turf and all, with a little lime sprinkled between every two or three layers of it, will at the end of a year be the very thing required without any addition to it.

If a clayey loam only is available, some sharp sand or road grit must be added to it to open its texture, and also a small quantity of old stable manure. And if a sandy loam only can be had, it must have a goodly quantity of old rotten dung added. But these are by no means so eligible for the purpose as the top of a good unctuous loamy pasture, without manure, because the object is, *not*, by stimulating rapid action in the roots, to produce either a large or extended growth, but to have the wood that is made, of a sturdy, mature quality, yet of a moderate size. This will always be found to tend more to fruitfulness than the rampant

growth consequent upon highly manured composts, such as we want if our object is to grow a large cabbage ; and which would have been equally useful in the orchard house if we wished to grow peach *leaves* only instead of fruit.

As regards manure, *that* will be required occasionally in the orchard house at certain stages of growth ; but that is best supplied in top dressings and in the *liquid* state.

Provided with a good soil, the next point in commencing operations in an orchard house is to pot the young trees. Upon the efficient way in which this apparently simple operation is performed, very much of future success will depend.

There are two different methods of preparing fruit-trees in pots for cultivation under glass. For that which is *first* about to be explained, the larger the pots are the better. One thirteen inches in diameter will suffice for the first two years, but not smaller than that. The object in potting well is so to place the plant or tree, that the roots may ramify freely and as nearly equally as possible throughout the whole mass of earth, and from the center to the sides of the pot ; and to keep the consistency of the soil equal throughout, upon which will depend the even distribution of water, which has to be constantly supplied to afford nourishment and to retain the soil in such a state, as enables the roots to appropriate to their use the elements necessary for the production of the organization of the plant.

To secure these objects good drainage is the primary step. Broken pots afford the best material. An inch of these in depth should be placed all over the bottom of the pot, and upon these put a layer of equal thickness of moss or half decayed turf, to prevent the earth when placed in the pot from getting down to the lower drainage material, and stopping it up. A better material than moss for the latter purpose is cocoa-nut fiber, or the outer husks of cocoa-nuts torn or beaten to pieces.

Supposing the potting compost to consist either of loamy turf laid up, or of the mixtures above advised, it should be chopped up with the spade and used in the rough state. If some of the pieces of the fibry turf are as large as eggs, so much the better ; their elastic quality will compress, and will tend to keep open the ball of earth. It is a good plan, also, to mix some pieces of charcoal an inch or more square, or of broken sandstone, or any *porous* stone, with the compost, in the proportion of a hatful to two bushels. This is to keep open the soil, and to become little reservoirs of moisture around which the young roots will cling.

Having laid the foundation of drainage, cover it over with an inch or two of the compost, and then introduce the young tree. Before doing so, however, examine the roots of it carefully, and cut off smoothly any torn or ragged root. Then, holding it in the pot with one hand in such a position that, when filled, the surface of the soil may just come to the same part of the stem of the plant that touched the surface of the ground from which it has been removed, (and taking special care that it is not now placed deeper than it was planted before,) fill round and between the roots gradually with the potting compost, thrusting the earth down from time to time with the points of the fingers or a potting stick of an inch diameter. By this means the roots are to be placed in close contact with the soil throughout the pot. Take care that, while sufficient pressure is used to make the earth moderately firm, the force is not so violent as to break the roots. Thus the pot, when filled, will, from the pressure having been applied as each handful of earth was introduced, retain something like an equal consistency of texture throughout, without any thumping of the pot on the potting bench, as is sometimes recommended, to the great danger of the roots. The pot should not be filled to the top

edge : leave an inch in depth of the pot within the rim free to receive and retain the water necessary in future cultivation.

When thus placed in the pot, the young plant will be in a favorable condition to ramify its roots throughout the ball of earth, during which process it will be forming its head, consisting of its branches and its bearing wood. By the time that frame-work of the future tree is perfected, the roots will have filled every part of the compost, and, in the common parlance of gardeners, the tree will want potting. But now will appear the great value of efficient work. No new potting must take place, at all events until a crop of fruit has first been grown ; and hence the importance of having got the roots into such a state by the past treatment as will enable the cultivator to supply the tree with all the nourishment it will require during the next year's culture, for its growth and for maturing a crop, by means of liquid, whether water only or combined with manurial matters.

It will be readily perceived that this can only be done by an even distribution of the liquid *throughout* the ball of earth ; and that distribution can only be insured where the potting compost, and the mode in which it has been used, are such as to render the whole a moderately compact body, pressing nearly equally on its several parts, and upon the sides of the pot in which it is placed ; the *downward* pressure being resisted, and the center consequently retained open, by the elasticity of the body of roots on the one hand, and of the fibry potting material on the other. It may seem to some that needless minuteness has been insisted on upon the subject of potting. But, the principle explained in this paragraph being understood, the young cultivator will soon learn by experience of how great consequence it is that these first operations (in this method of fruit growing) should be well performed.

But there is another mode of preparing or potting fruit-trees for the orchard house, differing materially from the foregoing, and which is adopted when it is intended that the pots shall be placed in the house upon a rich border, into which the roots are to be allowed to introduce themselves through the bottoms of the pots during the growing season ; and this is a much more simple operation, and moreover a better mode for insuring a large crop ; because, although placed in pots, upon that system the plants are not dependent for support upon the earth in the pot only, but, while in active growth and in the season for maturing the fruit, they partake in a great measure of the advantage derived from open ground culture, without being liable to many of its casualties. And therefore, where the situation of the orchard house is such as to permit of these borders, or rather where the proprietor does not desire to combine other objects in the same house, the last mentioned plan is the best for adoption. But whenever it is wished to adopt pot culture in a house in which, for any reason, it is not intended to have an open border of earth, the plan of potting that has been described is the only one that can hold out the prospect of a moderate degree of success. Before proceeding with remarks upon the general principles of cultivation, the other system of potting just alluded to shall be explained.

(To be continued.)

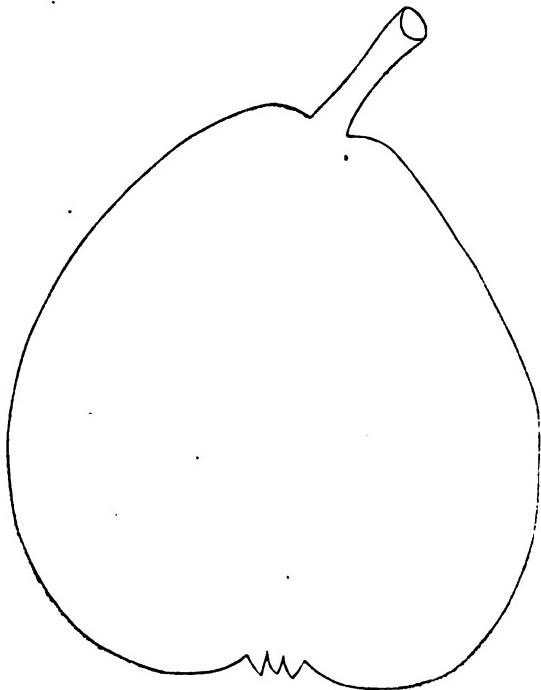
[This is a subject of growing interest, and its value is destined to be fully tested here by some of our leading amateurs. We have already expressed our opinion as to the extent of its value. The second article of "An Old-Country Man" contains full particulars in regard to pruning, watering, and general treatment.—ED.]

NEW PEARS, WITH DESCRIPTIONS.

BY HON. MARSHALL P. WILDER, BOSTON, MASS.

MR. EDITOR:—Complying with your request, and sympathizing with you in your recent loss by fire, I am most happy to contribute my mite in sustaining your excellent Journal, which for more than fifteen years has been a constant companion on my table.

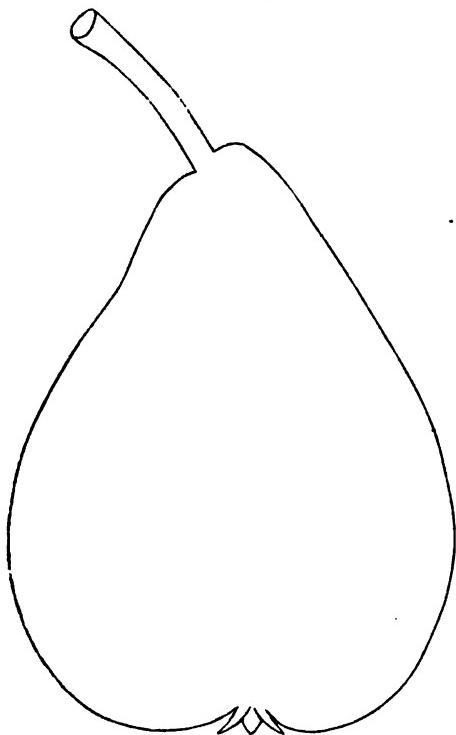
I therefore annex descriptions of a few modern Pears, which, in my estimation, possess valuable characteristics.



BRIALMONT.

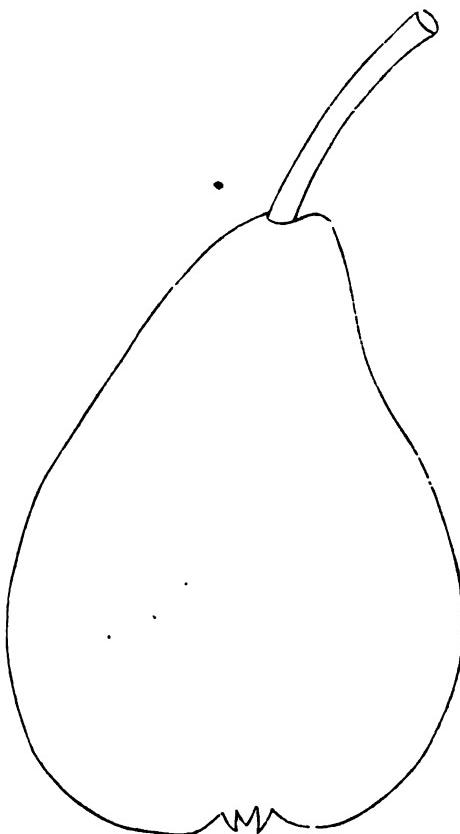
BRIALMONT.—*Size*, large; three inches long by two and a half in diameter; *form*, varying from obovate to obtuse pyriform; *stem*, thick, short, frequently set on one side, and inserted without depression; *calyx*, closed, sunk in a rather shal-

low basin ; *skin*, yellowish green, stipules indistinct ; *flesh*, white, melting, juicy ; *flavor*, sweet, rich, aromatic ; *season*, first of November ; *quality*, best ; *tree*, habit erect, resembling the Urbaniste, hardy and prolific.



BEURRE ANTOINETTE.

BEURRE ANTOINETTE.—*Size*, three inches in height by two inches in diameter ; *form*, acute pyriform ; *stem*, one inch in length, generally planted a little on one side, and without depression ; *calyx*, large, open, sunk in a rather shallow basin ; *color*, dull yellow, stippled with coarse russet dots, with bright carmine cheek ; *flesh*, melting and juicy ; *flavor*, vinous, saccharine, rich ; *season*, October 1st to 15th ; *quality*, very good—may prove best ; *tree*, strong, hardy, prolific, and of excellent habit.



HENRI VAN MONS.

HENRI VAN MONS.—*Size*, three and three-eighths of an inch in length by two and one-fourth in diameter; *form*, oblong acute pyriform; *stem*, long, curved, planted in a fleshy ring at the base; *calyx*, closed, sunk in a narrow, small basin; *color*, dull bronzy green, profusely covered with coarse russet dots, and clouded with red on sunny side; *flesh*, half melting, juicy; texture rather coarse; *flavor*, sweet, vinous, with nut-like aroma; *season*, October to November; *quality*, very good; *tree*, vigorous, hardy, with magnificent, large, luxuriant foliage and flowers.

COLORÉE D'AOUT.—A very beautiful pear, size, color, and form of Louise Bonne de Jersey, but with brighter tinge on the sunny side. *Quality*, very good. Ripe in August.

URSULE.—*Size*, medium; *form*, obovate pyriform; *color*, yellow, with a crimson cheek—handsome and prolific; *quality*, very good; ripe in October.

DR. NELIS.—*Size*, below medium; *color*, yellow, with vermillion cheek; *flavor*,

sweet, rich; *quality*, best—equal to its congener, the Winter Nelis; ripe in November and December.

BEURRÉ SERINGE.—*Size*, medium; *form*, same as the Urbaniste; *color*, yellowish, with brown and red cheek; *flavor*, melting, juicy, and fine; *quality*, very good; *tree*, hardy and prolific; ripe in September.

MONSEIGNEUR AFFRÉ.—*Size*, medium; *form*, roundish; *color*, dull russet; *flavor*, sweet, rich; *quality*, very good; ripe in December and January. A constant bearer, and very hardy.

DR. BOUVIER.—*Size*, medium; *color*, yellowish green, with brown cheek; *flavor*, sugary, vinous, and rich; ripe in December. On warm, generous soils, this Pear is not inferior to the Lawrence, which it resembles in appearance and quality.

BEURRÉ HAFFNER.—*Size*, medium; *form*, obtuse pyriform; *color*, yellow, with rosy cheek; *flavor*, sweet; *quality*, very good. This variety comes to us from Europe as a winter fruit, but its season here is November.

BEURRÉ BURNICQ.—*Size*, medium; *form*, acute pyriform; *color*, handsome russet; *flavor*, pleasant sub-acid, aromatic; *quality*, very good. A very prolific hardy tree, bearing every year.

NOTE.—The prospect for fruit is very unpropitious in this region. All of the flower-buds of the Peach and Cherry are destroyed, and many varieties of the Pear are fatally injured. Among the latter, I find the Lawrence and Sheldon buds have suffered badly; but the trees are sound. The fluctuations of the mercury have been very remarkable during the winter. On the eighth of February the weather was colder than it had been for twenty-nine years, the glass marking 23 degrees below zero. Then came the warm day on the third of March, with the thermometer, at noon, at 80 deg.; at evening at 65 deg.; then in five days after, on the 8th, it registered only four degrees above zero. The failure of our fruit crop will be attributed to these extreme vacillations. I do not think so, but apprehend the damage was done on the morning of Oct. 1, 1860, at which time our Grape crop was destroyed, and when apples froze on the trees so as to split open. Perhaps I can not adduce a better proof of this opinion than the fact that our Chinese Azaleas lost all their flower-buds at this time: a circumstance which never occurred before. Among the varieties of Pears which seem to have withstood this severe trial best, I find the Beurré d'Anjou, Urbaniste, Louise Bonne de Jersey, and some other of the standard kinds.

[We are rich in old friends this month. It is so long since Mr. Wilder has spoken, that we had almost begun to fear that his interest in horticulture was on the wane; but we find he writes with all his old enthusiasm. We thank him for the opportunity of laying before our readers the results of his experience with some of the more recent pears. We regret to hear of the loss of your fruit-beds; we have the same sad news from many different quarters. In some places, we know, from examination, that the mischief was done early in the season, and this will probably be found to have been the case generally, which will accord with your views. The destruction of fruit was caused, we think, not so much by fluctuations in the winter as by the imperfect ripening of the buds, the result of the excessive bearing of the trees during last season. Heavy crops, followed by early cold and wet weather, prevented the fruit-beds from ripening, and made them an easy prey to the first extreme change of temperature. How does that accord with your philosophy?—Ed.]

THE WINTER OF 1860-61 ON EVERGREENS.

BY H. W. SARGENT, WODENETHE, FISHKILL LANDING, N. Y.

DISASTROUS as our winters usually have been the past few years, yet we are not wholly alone in our misfortunes the past season. In England, on the 24th and 25th of December, the mercury fell in two places—at Chatteris in Cambridgeshire, and at Cheadle in Staffordshire—to fifteen degrees below zero; and even in London, and generally throughout the kingdom, to several degrees below. The result there upon vegetation has been more fatal than at any other period within the present century. The young shoots and spurs on peaches, apricots, nectarines, cherries, and even some pears, are quite destroyed, and even the old wood is injured.

Evergreen Oaks, Hollies, (fifty years old,) Phillyreas, Laurustinus, are killed to the ground. The destruction has been so complete, that in highly ornamental grounds the exhalation from the frozen plants has been positively offensive.

Various ornamental flowering shrubs, usually requiring the protection of a wall, have been unable to withstand the severity of the cold. Most of the Magnoliæ, even old and well-established plants, have been killed in an eastern exposure, and in a western so much injured as to render their recovery hopeless. The newer conifers as well as older varieties have all suffered to a greater or less extent. In fact, our own winter, bad as it has been, has proved the safer of the two, and for a much greater variety of plants. Although with us the mercury has fallen as low as nineteen degrees below zero in this place, and in many parts of the country to twenty-three and even thirty degrees, yet I believe the only effect has been to destroy the fruit-buds. I do not observe here, nor have I heard elsewhere, of any loss of young wood.

Could we have escaped the two excessively cold days in January, when the glass ranged from nineteen to twenty-one degrees below in this neighborhood, our winter would have been less destructive than usual; and though the mercury fell four or five degrees lower here than in England, yet the damage there was infinitely greater, adding another proof that the cold is not of so much importance as the condition of the plant at the time. Our wood, from our warm, dry autumns, is always much better ripened than the English, and consequently goes into the winter campaign much better prepared to resist cold.

This was particularly the case the past year, when, from the unprecedented quantity of rain and little sun in England, the summer's growth was very imperfectly ripened, and in the worst possible condition to endure even the ordinary frost. Thus Lilacs and Weigelas, which are always regarded perfectly hardy here, were in England very badly injured. Many plants growing with great vigor have been utterly destroyed, while the same variety of plants, when removed in early autumn, if ever so much exposed, have suffered comparatively little, the supply from the roots having been diminished; the system was relieved of excessive moisture by evaporation, and in consequently a much better state to resist cold.

Among the conifers, varieties which are unquestionably hardy, (never in this place at least having suffered,) have completely perished in England, such as *Pinus Benthamiana* and *Pyrenaica*. Even *Thuiopsis borealis* is badly injured, though with us it stands like our common *Arbor Vite*. Most of the younger *Araucarias*, *Deodars*, and even *Cedars* of Lebanon, are either killed or injured, while specimens of twenty years' growth have comparatively escaped, the wood being better ripened.

In my own neighborhood, as I have before mentioned, the effects of the winter have been much less severe than usual ; nearly, in fact, all the evergreens which I have in former years reported as hardy, continue to deserve this reputation. In addition to the previous list, I would add, as perfectly uninjured by nineteen degrees below zero—

Picea amabilis, nobilis, grandis, and Parsonii or Lasciocarpa. In addition to the previously mentioned *Abies*, are *Taxifolia, Jezoensis, Whittmaniana, and Pattonii*.

Cryptomeria Japonica, both the common variety and *Lobbii*, seem to have become acclimatized, and are hardly touched.

So, also, *Cunninghamia sinensis*, which is perfectly green, and beginning to grow.

Deodars, on the contrary, appear hopeless, except as bushes.

Cephalotaxus, both male and female, as well as *Thuiopsis borealis* and *Cupressus Lawsoniana*, are as hardy as our common Cedars. *Cupressus macrocarpa, Goveniana, and Knightii* are, however, killed to the ground.

The *Golden Yew* seems much hardier than the common English, (*T. baccata*), though this stands well, and *Taxus adpressa*, very pretty and distinct, is equally hardy as either.

Among the *Thujae*, (*Arbor Vitæ*,) *Hoveyi*, (*Hovey's*,) *cristata*, (*Buist's Seedling*,) *gigantea, glauca*, and *Craigiana* are perfectly green, and have been so all winter ; and even *Podocarpus nubigena* holds its color and health perfectly well.

Wellingtonias are somewhat browned, but wood and buds good.

Among the *Evergreen gains* of the past year, I consider the most important, *Cupressus Lawsoniana, Taxus elegantissima, Podocarpus nubigena, Berberis Japonica, Taxus monstrosa, Taxus microphylla, Pinus Jeffreyi, Pinus Beadsleyi, Pinus Sabiniana*; and among the named *Rhododendrons* are *Azureum, Sir Charles Napier, Bicolor, Grandissimum, Concessum, Vandyke, Barclayanum, Delicatissimum, Cœlestinum, Brayanum, Multimaculum, Achimedes, Magnificum, Prince Albert, Lord John Russell*, all of which are entirely uninjured and well set in flower-buds.

[We are all under deep obligations to Mr. Sargent for his valuable observations on introduced Conifers and evergreen plants. The results of his labor and devotion possess a practical value for all of us which can not be estimated too highly. It were much to be wished that we had a corps of such liberal-minded men at various points throughout the country ; the collected results of their observations would possess a deep and wide-spread value. We know of no way in which they could spend a portion of their wealth with more pleasure to themselves and profit to the public. Mr. Sargent gives us a sad picture of the results of the winter in England, but by no means overdrawn ; he might, indeed, have painted it in still deeper colors, if we are to form an opinion from the English Horticultural press. Standard Roses, Grape-vines, and other plants come within the same category. We think Mr. S. has assigned the true cause of all this desolation, in the non-ripening of the wood last fall ; and to the same cause we have elsewhere ascribed the loss of our fruit-buds during the past winter ; the cause of non-ripening in this case, however, is to be assigned more, perhaps, to the overbearing of the trees last season, than to the cold fall, early winter, or sudden and extreme variations of temperature. The whole subject is very suggestive.—ED.]

THE VERBENA AGAIN.

BY J. PENTLAND, BALTIMORE.

MR. EDITOR:—I have neither the time, nor yet the inclination, to enter into a controversy with any one in a newspaper or magazine, believing that no real good ever comes from it, and people get tired of it very soon—at least I do; but as our “talented” English friend, Mr. Veitch, has seen proper to misconstrue the remarks I made in a former number of your valuable magazine, I must try and put him right; and really I think he must have been in a very bad humor when he penned the article that appeared in the March number of the *HORTICULTURIST*. Perhaps he had been making too hearty a meal upon “roast beef and plum pudding,” which didn’t altogether agree with his stomach, and may have caused an uncomfortable irritation; and having fallen upon my poor article, the Verbena, he must needs pour out his wrath upon my poor head, or perhaps he has a *batch* of those very same “novelties” to send out “imported direct from England,” and may have thought the article in question might interfere with their sale; but no, sir, I didn’t impart any such unworthy motive to him in the least; by no means. If he supposes the article in question “to have originated in petulance or disappointment at not being so successful in that line as to set his (my) own beyond all question at the top of the list,” he never was farther from the mark. I can assure him, I have none whatever to offer as being so superior, and have no interest in any other whatever; therefore I have nothing to gain on that score. But Mr. Veitch in the very commencement (unknowingly) proves the very point of my argument; and his own words shall condemn him. It was from my knowledge of “America being unspeakably better adapted to the Verbena than England” that I drew my conclusions; and say again “*emphatically*” that were American growers of the Verbena to give the same attention to the cultivation of seedling Verbenas, (or any thing else,) they would outstrip our English cousins in the production of better varieties of that truly beautiful flower; and “that there is something rotten in Denmark,” I am free to admit, and prythee wherein does that rottenness consist? I will tell you: it is in pandering too much to this very “European opinion;” and it was simply to call attention to this too prevalent “opinion”—to the exclusion of our own interests as producers of articles, (even superior to those that have passed the censorship of the same committee on flowers in England,) that I penned the article in question; and there I agree with you that perhaps it would be well if we had in this country a like “censorship” upon flowers; but suppose we had, what would it effect? simply nothing. True, the flowers might be measured by plumb, square, and rule, and according to the rules laid down by “Glenny.” Now suppose a Verbena had all the qualities mentioned by Glenny, and yet withal the plant should be a poor bloomer, or would not stand the sun, would the public be benefited by those qualities if the plant lacked the latter quality? and depend upon it, there is not one in a hundred, when they come to a bed of Verbenas, that ever stop to examine whether the single bloom comes up to the requirements of Mr. “Glenny” or not; it is the general effect that is looked at. What do your customers ask you when they come to buy a Verbena? Is it, Has it Mr. Glenny’s standard? or is not the very first question they ask, “Is it a good bloomer and a good grower, and will it stand the hot burning sun?” Now, if you can not answer these questions affirmatively and positively, ten to one they will not buy your Verbena, be it never so fine in all the qualities of Mr. Glenny, or with never so fine a

name ; and were all our Verbenas put to this test, you may depend upon it our catalogues would indeed be very much abridged.

Again, I would say to Mr. Veitch, that I have no fault to find with the aristocratic names given to their "bantlings" (he don't like the word) by the English growers—none in the least ; I would rather congratulate them upon the great facilities they have in such names over us poor republicans ; but what I do certainly find fault with is this, that the public are led away by such high-sounding titles ; they savour too much of toadyism. But that, say you, is none of our business. If Mr. Veitch will examine the article again, he will find that the English have received full credit for producing some really fine Verbenas, that do tolerably well in this country ; but, sir, I find that the English writers have been more condemnatory upon the Verbenas raised and sent out by these same English cousins than I have. See the London Florist for 1859 or '60, (I can not say which, as my numbers are at the bookbinder's,) and read an article or two therein entitled "The Slaughter of the Innocents," and Mr. Veitch will be surprised at the small number therein contained as *worthy of cultivation*, for all the purposes for which the Verbena is so much used. Read it, Mr. Veitch ; it will enlighten you a little on the subject. If I get time I will go to the binder and get the year and the page for you, and send it to the editor ; only keep your temper, and do not get to roaring, as the English Lion is apt to do when all don't go right according to his fancy ; and let me say that I did not intend to give offense in the least to any of the "English growers," but would bid them God speed in their great and glorious work of striving to excel in the production of all that is beautiful in both fruit and flowers ; and whenever they have any thing that is *decidedly* good and *distinct* they will always find purchasers here, but I hope not to the exclusion of home grown articles of *equal merit*. Is not the fact notorious ? Instances could be related without number, of home productions having to be sent from here to get this "European opinion." Mr. Fuller, in his article on "Imported Roses," mentions another instance of what I aim to put a stop to, if possible, by any feeble efforts of mine. Truly it speaks well for our "English cousins ;" but is it not very derogatory to us that we have to submit to such things ? What encouragement is given here to the growers of any thing really fine, for all the labor and time he has expended in its production before he can sell that article ? It must first get this "European opinion." "Can no good thing come out of Nazareth ?" or does Mr. Veitch suppose that this thing of pandering to this "European opinion" is all right, and that we Americans do not know a good flower when we see it ? Must we still submit to see John Bull turn up his nose when we offer an opinion of our own ? Out upon such an opinion. Now, Mr. Veitch, I am an American citizen with a Scotch name, as you will perceive ; but, sir, you and I both are indebted to the American public for our "bread-and-butter," and let us uphold and sustain the productions of this country in preference to any other, when they are of equal or *superior* merit ; and let the importations come in secondary, and we will prove them, and hold fast to that which is good until we can excel our cousin again. I hope, now that the ball is set in motion, that there will speedily be a committee of censorship appointed to examine and pass judgment upon *all* new productions that may be offered to the public for their patronage ; and I am sure no honest man would object to such a committee passing judgment upon any thing he might have to offer ; but if we keep on pandering to this "European opinion," some may say that we have not judgment enough among us to give an opinion upon the merits of a flower ; but, sir, if this committee is appointed, I hope when flowers are submitted for their judgment we will not adopt the plan of the English gar-

deners, and use the pincers and scissors, and all the other paraphernalia to dress up a flower for their inspection: no, sir, I hope we won't adopt that opinion as being necessary; but let them be submitted as nature made them, and not as art may dress them in order to get a good drawing of them. How many of the flowers that are annually sent out come up to the description given of them in the beautiful plates that we get of them? I hope some other will answer that question. In conclusion, I would say, give us Americans the same encouragement as the English gardeners receive from the public, and we will "beat them out of their boots" (as the Connecticut Yankee would say) in the production of choice flowers and fruits.

[It will be evident, from Mr. Pentland's article, that Mr. Veitch and Mr. Henderson have not fully understood his object, as we intimated. We see no reason to change the views we expressed last month, considering them sound and liberal.
—EDITOR.]

THE CURCULIO.

BY DR. I. P. TRIMBLE, NEWARK, N. J.

[*Continued from page 180.*]

THE Cureulio is a hard, black, rough beetle. A handful of them, when at rest, with their legs and proboscis folded under them, could be mistaken for a handful of hemp-seeds. Like other beetles, their wings, when not using them, are covered by a case or shell; the proboscis is long in proportion to their size, and is the instrument with which they puncture the fruit, and is not, as some suppose, an ovipositor. (See plate.)

Persons familiar with the Curculio seldom see them fly, though it is supposed that they pass from tree to tree, or from orchard to orchard, upon the wing. Sometimes, when jarred from the tree, they will open their wings, and instead of falling, will come down at an angle, and light on some distant part of the sheet, or on your person, or sometimes even fly off to another tree. I have never seen them use their wings in passing from one part of the tree to another. In cool weather they walk about deliberately, but in the middle of hot days they are in a greater hurry, and fairly run. In cold, wet weather they are perfectly quiet, and are concealed under portions of bark, or in the crevices of old wounds or knots in the body or large branches of Plum-trees. Like other insects, in their last or winged state, the object of life is to arrange for the continuation of their race. In their larva or grub condition, they were nearly all stomach, and eating occupied their entire time; now, they have no stomach of any account, and they scarcely eat at all; consequently, they soon become exhausted, and towards the last are but mere shells.

The mark upon the fruit made by the Curculio is crescent-shaped, (and from that circumstance she is sometimes called the Turk,) and looks like the indentation of the little finger nail of an infant, and the reason it is so is, that the insect, while making it, remains standing on the fruit in the same position, only moving its head. When this crescent-shaped incision is completed, she introduces her proboscis its full length, from the center of the crescent towards where she stands, and immediately under the skin of the fruit, and at the bottom of this puncture

enlarges, so as to be suitable for the reception of the egg. This done, she turns and deposits the destined egg at the entrance of this tube ; then turning again, with her proboscis pushes it gently to its proper place. What remains now is to secure the precious deposit from any danger from exposure to the air or weather, as would be likely to occur by the growth of the fruit opening the wounded part. This she does by carefully plastering up the entire incision by a kind of wax, of which she seems always to have the requisite supply. I have often, when watching this operation, and especially at that part of it when her proboscis is buried up to her very head, been struck with her resemblance to the woodcock when his beak is entirely imbedded in the ground.

The Curculio seldom deposits more than one egg in a fruit. Whether the duplicates or triplets that are sometimes found in our fruits belong to the same mother, is hard to say, but I suppose not. If a Curculio, however, is confined in a bottle with but one plum, she will puncture it all over, so that it will sometimes have the appearance of a nutmeg-grater. The time occupied in each operation is eight or ten minutes, and is repeated some twenty times each day for several weeks.

In the early part of the season, while the weather is cool, the Curculio egg will not hatch in less than ten days or two weeks, and any time during that period it may be taken out with the point of a penknife, or, what is better, a rather blunt toothpick, or it may be broken by pressing with the thumb-nail over the spot where it is deposited, and if your ear is a right good one, you may even hear the snap. In either way you may save the fruit ; the wound soon grows over, scarcely leaving a blemish. It is well to know this, especially if you have young trees bearing for the first time, and you are anxious to test the fruit. It can even be done repeatedly ; but remember, it *must* be done before the hatching, and in very warm weather this takes place very quick—even as early as four or five days—and the moment the young insect is free, it makes its way rapidly towards the heart of the fruit, leaving a pathway at first so fine as hardly to be visible. If you see *gum* about the orifice of the wound, it is too late, the mischief has been done.

Fruit punctured by this insect continues to grow even after the larva has penetrated to the center, but finally its vitality, if it is *stone* fruit, becomes destroyed, and it falls to the ground, though not till the young insect is almost full grown.

With the Cherry, the fruit matures almost as soon as the grub of the Curculio, and those who eat the first that appear to be ripe, will often encounter this worm, and it is needless to give all such people any description of its personal appearance.

Here the cedar birds, the robins, and even the crows come in to our advantage—let them alone. The boys will be getting out their guns, and sending for powder and shot—stop them ; these are only premature cherries, generally red on one side only, and in that side a worm ; let the birds have them—your crop of cherries will be the better the next year.

You will find plump, fat, full-grown specimens of the larva of the Curculio in your apricots, in your earlier apples, in the Early York peaches, and in some of your plums. Apples in June and July will be falling by millions : some are only blights—an effort of nature to guard against overbearing ; but most of them will be wormy—the embryo Curculio of the next year. Pears and quinces suffer less than the above, but you may often see the crescent mark on these also ; and should the more favorite fruits fail, these varieties could and would be used to prolong the race. I have seen the crescent mark even on berries in the woods, and when all the fruits fail, or before any of them are ready, she will deposit her eggs in the bark of the plum-tree itself.

However strange and unnatural it may appear, that the same insect should resort to a nidus so different as a fruit and the bark of a tree, still the testimony is too strong to the fact, to leave it longer in doubt. My own experiments have removed all the misgivings of my own mind. Dr. Fitch, in his lecture on the Curculio, at New Haven, last year, admits the fact, and seems only at a loss to know how to account for the knot itself, and supposes it to be like the cancer in the human body. The Doctor seemed to have forgotten that hundreds of insects deposit their eggs in the bark of the bodies, branches, and twigs of trees; in the veins, skin, or parenchyma of the leaves, or on the stems of the leaves—and at once, as if by magic, there arises around that egg a balloon, a ball, or a warty excrescence, that affords the double purpose of protecting and feeding the growing insect.

We must not only have a season without any fruit, but the trees also must be destroyed before we can hope to be rid of the Curculio, for want of a nidus in which to deposit her egg. But it may be asked, what is the proof of all this?

I have seen the Curculio making the crescent mark upon the tree. I have watched day after day, and seen the growth of the knot round that mark. I have seen the gum exude from the orifice. I have taken the full-grown larvæ from those knots, and could distinguish no difference between them and the larvæ taken from the Plums. I have placed them in vessels filled with earth, and kept them separate from others, and watched them during the progress of transformation. They go the same distance under the ground, make the same kind of a cell in the earth, assume the pupa condition in precisely the same way, and come out the perfect insect in the same time. You may examine the two either with or without a glass, and there is no apparent difference. Mix them together, and you can not separate them. Thus, I think it may be considered as fully proved, that the same insect that punctures our fruit causes the black knot on the Plum tree also. It seems both strange and unnatural, but the insect world is full of wonders.

The knots on certain kinds of Cherry trees are somewhat different, and are caused by another insect of the same class. The knot on the Plum tree is a warty excrescence one side, while that on the Cherry envelops or surrounds the branch. Neither are the grubs found in the same situation; in the Cherry it is usually in the pith or heart of the twig.

I have stated that the *rot* sometimes so destructive to the Plum crop is caused also by the Curculio. Some persons will dispute this proposition, and tell you that it is the weather only. I admit that the weather has much to do with it. A crop of Plums will be destroyed much sooner in hot, wet weather (what is called dog-day weather) than when the atmosphere is dry and pure. I have seen beautiful crops of fruit almost ready for the market, and when the owner was congratulating himself that he was out of danger, disappear in a few days; and this is more often the case with those kinds that grow in clusters and where many touch each other. The experienced fruit grower will watch his trees closely at this season; where he sees a plum decayed, or only a speck upon it, he will carefully punch it off with a pole, and if his experience is like mine, he will find, that in the center of where the decay commenced, will be the crescent mark of the Curculio. If that plum remains upon the tree, all the others that touch it, either directly or indirectly, will *rot* also sooner or later, according to the weather. Where the eggs of the curculio are deposited in Plums so nearly grown that the pits are becoming hard, they seldom hatch. I suppose the acid of the fruit at this time destroys the egg, and it in turn becomes a poison to the fruit. This is my theory, and whether true or not, the destruction of our Plum crops is sometimes so great from

this cause, as to call for the closest attention. Watch your trees every day, take off every specked plum at once; some even now will be found to have the grubs of the curculio in them: be careful to destroy them.

In neighborhoods where the Curculio has undisputed possession, as in most parts of this State, since the great crops of peaches, the numbers that can be taken in this way, in the early part of the season, will be almost incredible.

Some have said that the Pea-bug is the same as the Curculio, and they certainly look very much alike, but any one who will try them by the crushing process between the thumb and finger will know that they belong to different classes of insects.

If you have determined to save your fruit from the Curculio, watch your trees often. If you have some promising fruits in your gardens, run out with your small sheet before breakfast, and give your trees a tap; if you find any then, go again before you attend to business; run out before dinner and before tea. As your beautiful fruits grow and promise such luxuries in the autumn, you will become more and more interested, until, like Scott's Blinkhoolie, in the Abbott, you will come to think no life so pleasant as that passed among the Pears, the Peaches, and the Plums of your fruit garden. There is nothing so beautiful to adorn your dinner-table, after the substantial part has been disposed of, as the fruits taken from your own garden; and if you have more than you want for your own use, what is there to compare with the fruits of your own raising, *to give away?*

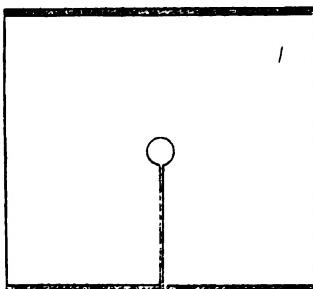
If all the fruit that falls from all the varieties of fruit trees could be eaten by our hogs, or gathered by hand and destroyed before the grubs have escaped into the ground, the curculio question would soon be effectually settled. This is an eminently practical view of the subject. An individual may do this, or it may be possible in some places to carry out a neighborhood combination; but anything further than this is hardly to be hoped for, and unless Providence interferes, the curculio is likely to continue to be one of the great trials of the fruit grower's life.

One Summer in my experience I escaped the curculio. I found here and there a few at first, but not one in a hundred of ordinary seasons, and I had a crop of fruit without trouble, and that was to me a new sensation—as if you, Mr. Editor, should experience one season's exemption from mosquitoes.

In my efforts to trace this strange circumstance to its cause, I remembered that the year before there had been *no rain in that immediate neighborhood*. We had been often threatened with showers, but they had always failed us, and the ground had become as dry and parched as the Libyan deserts. Since then I have gone through a series of experiments, and have found that the curculio will not live through its period of transformation in earth that is kept dry. The drought of the preceding season was undoubtedly the cause of my exemption from the pest that year. Had I used some of the curculio remedies so much in vogue, they might have had the credit. And all the credit they all have is due to some such adventitious circumstance. Not one of them has the least practical value. I saw a paragraph some time ago giving an account of the plan of Ellwanger & Barry, in the management of the curculio, and it is exactly the same as that I have always used, and which I believe was first described by the late Mr. David Thomas of Western New York.

It is a very simple operation, as seen by the cut—made of common muslin. White is better than unbleached; the curculio being dark, shows to more advantage. For small trees, one of five or six feet square, made of two breadths, answers a good purpose, and one person can manage it. For such trees the palm

of the hand is sufficient to give the requisite jar; but for larger trees, a sheet 10 or 12 feet square will be necessary, and it will require two to manage it. Such trees, too, will require the blows of a mallet to jar them, but you must not strike the tree directly with the mallet, or you make a serious wound. Saw off a stout



branch, leaving a stump one or two inches long, and if you will pare off the edges of this stump so as to present a convex surface, it will bear the blows of the mallet longer, and by careful management you make it last the whole season.

The beginner in the pursuit of the curculio will often overlook them, as they lay on the sheet. The little fellow folds himself up so closely and is so quiet, as to be mistaken for the dried buds, that are falling from the trees at this time; but in a few days the eyes become experienced, and the instinct that teaches them to escape observation as long as they are quiet, ceases to avail them in such a trap as this.

The next thing is the *crushing* process between the thumb and finger. Like other beetles, the curculio is hard and crisp, and requires some force to mash it—more than a fly—less than a flea. Some people have a conscience about the killing of insects—I have. I would not kill a spider nor an humble bee; neither of them would do me any harm if let alone, and I *know* they do a great deal of good.

The fruits are not only luxuries, but the necessities of life; the curculio would appropriate them all without any hesitation if she wanted them. Man was created with dominion, and I think in this case is justified in pronouncing against them; and whenever I get a curculio fairly between my thumb and finger, I carry out this decision.

Much has been written about the curculio in this country, but most of it very crude. I have met with some of those writers that have confessed never to have seen one. Had this insect existed in Europe it would, from its great importance, have been thoroughly investigated by entomologists; but here we have had but few to devote their lives to this science, and our indigenous insects are but little known. My own investigations until recently were confined entirely to the means of preventing its ravages upon fruit; lately I have paid more attention to its habits of life—have not only summered, but wintered with it.

The larva (or worm we find in the fruit) when full grown eats its way through the skin, and immediately penetrates the ground. If the earth is sandy or loose, it will sometimes go to the depth of eight inches, and seldom less than three or

four ; there it prepares for itself a kind of cell, something similar to the cell of the mud wasp, and this is its cocoon—here it undergoes its metamorphosis. In a few weeks the white maggot without wings or legs will be a black beetle, ready either to run or fly. If you have them in confinement you may feed them with leaves or any of the fruits, and you may see that they eat, though very sparingly. You will generally find them perfectly quiet, but touch them, and instantly they are full of life ; this will be the case all winter, if you keep them in a warm situation, but out of doors in our climate they are perfectly dormant. Where the vast army of curculios pass the winter it is hard to say positively, but I have found them in the crevices of the rough bark of trees, in walls, and even under the shingles on the roofs of buildings.

I have often supplied the young curculio with fruits, but have never known them puncture them, or make the crescent mark ; hence I infer, that the opinion of some that we have two generations the same year, is a mistake.

Those who cultivate the apricot know that it blossoms several days before the other fruit trees, and the young fruit grows very rapidly from the start, but I have never seen this fruit so early but what the curculio was ready to pounce upon it as soon as it was large enough to bear the puncture ; consequently, the curculio is ready to deposit eggs many days before any of the fruits except the apricot are large enough for her, and during this period of waiting I have seen *her*, or some other beetle so near like her that my experienced eye could detect no difference, making the crescent mark on the bark of the twigs of the plum tree themselves, and that led to the subsequent investigations that proved to my satisfaction that the curculio causes the *black knot* also.

In some places but little inconvenience is suffered from the Curculio. Where I have had the opportunity of investigating, I have found the soil a stiff clay, and conclude that the larva was not able to penetrate deep enough to be secure either from drought or some other contingency during its period of transformation.

Some people plant plum-trees over water ; some pave the ground under them, and say that by these means they secure crops. If so, it can only be explained by insect instinct, which in this case teaches the parent that her little ones will not be safe in falling in such places, and she therefore chooses other trees. My own understanding is so at fault in all attempts to comprehend the wonders of the instinct of insects, that I will not dispute this proposition, and to prevent others from sneering at what may seem so absurd, I will relate an instance of the instinct of another beetle still more wonderful.

The cockchaffer is a favorite food of rooks and crows ; now, if the chaffer sees one of these enemies approaching, and has not time to escape, instead of simulating death, as the Curculio does, by drawing up her limbs and trunk, and seeming like a little round bug, he will sprawl his legs out at full length, and look for all the world just as a dead chaffer ought to, knowing, from instinct, that rooks will not eat bugs unless they kill them themselves. After that, let man stop all his nonsense, of boasting of the superiority of human reason. But the HORTICULTURIST is not big enough, and I must stop.

In visiting the New-York markets, I see fruits from almost every part of our country. The apricots, peaches, plums, and early apples from Georgia, the Carolinas, and Virginia, have been marked by the Curculio. Later in the season, when the same fruits come down from the north, the same unmistakable mark is visible. Every year a large portion of the apples are what the country people call gnarly —have been tampered with by the Curculio ; many of them stung in several places, and so misshapen in consequence, that but a mere section of the apple will

have a natural appearance. Our whole fruit crops seem, in some near future, to be at the mercy of this little insignificant insect, so small that it takes near 25,000* of them to weigh a single pound. And the question arises, What can be done?

My mode of managing, if properly carried out, will be successful, but it is very laborious, and but few will persevere.

If you have large orchards of apricots and plums, when the soil and climate suit these fruits, the prices they will bring you will justify the expense of protecting them from the Curculio. If you cultivate cherries and apples, the jarring process is impracticable where the trees are of any size; in this case, be sure to have your stock under the trees as much as possible when the stung fruits are falling.

If any of my readers choose to try the various nostrums so highly commended by their inventors, all I ask is that they shall report fairly—don't jump at conclusions that may mislead others. And let every one remember, that Ellwanger and Barry have men employed throughout the Cureulio season, in protecting their fruit by this jarring process—that they do protect it by this process—and not depend upon any thing else.

[The doctor's article is so long as to preclude remarks for the present.—ED.]

THE YELLOWS IN PEACH TREES.

BY P. BARRY, ROCHESTER.

THE communication of Mr. Reid in your March number, reviewing the proceedings of the Western New York Fruit Growers' Society at its late annual meeting in Rochester, has directed my attention to the report of *The Country Gentleman* upon which Mr. Reid's strictures were based. The remarks on the subject of the yellows, attributed to me in that report, are as follows:

"P. Barry's opinion is that the yellows is *not contagious*; has had trees from a region badly affected, which, planted on good ground, became healthy—would, however, advise none to plant them. The cure of the yellows seemed to be a good fertile soil, and the cause of it a poor worn-out soil. He thinks the young-peach trees do not have the yellows in New Jersey until they are 3 or 4 years old."

The reports of the *Country Gentleman* are usually remarkable for their accuracy, but I am constrained to say that this one is incorrect in several particulars. It is true the fault may in part have been mine in not expressing myself clearly; but, at all events, I shall now state what I at least intended to say.

1st. I did not intend to say that "I had trees from a region badly affected, which, planted on good ground, became healthy."

I stated that I had frequently obtained trees from parts of the country where the yellows were said to exist, and that these trees had never shown any signs of the disease in our grounds. The question was asked me then if I would recommend the purchase of trees from nurseries when this disease was prevalent, and I said I would not.

* The arithmetic in the first No. was not correct.

2d. I did not intend to say that a good fertile soil, or good culture, or both, or any thing else, would *cure* the yellows; for I think that when a tree is once affected with that malady it can not be cured; but I recommended them as *preventives*. My opinion as to the cause of the yellows is stated in the following report from the *Rural New Yorker*, and I also stated the same views before the Progressive Gardener's Society last fall in Philadelphia.

"Mr. Barry thought the yellows not contagious. Some have supposed that the disease is communicated by the pollen of the flower. Mr. B. thought the cause to be a poor, impoverished soil, and general bad management for a series of years, which develops the disease and makes it constitutional."

Now I am not dogmatic on this point. My opinion was asked, and I gave it, as I usually do, for what it is worth. I can assure Mr. Reid, however, of this, that I had no desire to injure his business, or that of any other nurseryman in New Jersey.

If I wanted peach or any other trees that Mr. Reid had, I would have no hesitation in buying from him, and I might say the same of others in New Jersey. I think I may also take the liberty of saying for the Fruit Growers' Society of Western New York, that it never has, in its discussions, shown the slightest disposition to favor the nurserymen of one portion of the country at the expense of the other. Their published reports will bear me out in this. The question of "yellows," like other *diseases*, as this has been supposed to be for half a century or more, was considered a legitimate subject for discussion and inquiry in all its bearings.

Mr. Reid has been for once in his life too sensitive, and I regret it, because he is one of those nurserymen whose reputation and standing should place him far above those petty jealousies which, of late years, have been too frequently manifested. Our great country, divided as it is even, affords scope enough for us all. Let us live together and work together in harmony, and when we differ in opinion, as we may and must, let us do it in a manly and friendly way. Leave the wrangling to the politicians.

[We respond heartily to Mr. Barry's closing sentiment; a sentiment which we have time and again endeavored to impress upon our readers. "Let us live together and work together in harmony." In nine cases out of ten, a little friendly explanation, received in a kindred spirit, will set in a proper light what would otherwise seem dark and obscure. Mr. Barry is one of the last men to leave a friend to the incertitudes of a false impression, and Mr. Reid is one of the last not to accept an explanation. Mr. Barry's name has been so long absent from pages over which he once so fitly presided, that we welcome it back again with peculiar pleasure. The spell that held his tongue in silence having been broken, we hope he will speak again, and often.—Ed.]

STATISTICS OF GRAPE CULTURE.

BY WILLIAM A. WOODWARD, MORTONVILLE, ORANGE COUNTY, N. Y.

THE past winter, though in general moderate and pleasant, was characterized by two remarkably cold days, said to be the coldest for thirty years. Not having seen the "oldest inhabitant," I am unable to give you his opinion on the subject.

In the early part of February, in writing to a friend, I stated that "the new varieties of grapes *appear* to do well here, (latitude 41° 30' N.) I am keeping records for future publication," etc. The observations made within a few days (April 10th) as to the effects of the frost, (which were unknown to me at that time,) enable me to state positively the condition of vines which were left in the open air during the winter of 1860-61. The thermometer indicated, January 13, 1861, twenty, twenty-nine and a half, and thirty-six degrees below zero at three localities in this vicinity. My residence is in the Highlands of the Hudson, at an elevation of about four hundred feet above the Hudson River. On the eighth of February the weather was again at near the same temperature, cold enough to test in the most satisfactory manner the hardiness of our native grapes. It may be received as an axiom, that all such as withstood this test are hardy beyond dispute. The two cold terms alluded to were of short duration, and were succeeded by moderate, clear weather. Undoubtedly the sun shining upon the frozen plants had as much to do with their injury as the extreme cold itself. This is the experience of many intelligent persons. My attention was called to it a year ago by H. W. Sargent, Esq., who had exposed one of his favorite Evergreens. He found that the south side of the tree was injured by the sun's rays, while the north side of the same tree was in no manner hurt. Again, Mr. Cornell, of New Windsor, informs me that an Isabella vine set on the north side of his barn, where there is seldom a ray of sunshine even in summer, has come out unscathed; while his vineyard of the same grapes is almost if not quite destroyed for fruiting the coming season. On my own grounds, the more tender varieties are not injured where they laid down upon the ground, and were partly covered with leaves or snow, which was sufficient to shield them from the sun while in a frozen state. I have made a list of such grapes as I am cultivating, and the condition they were in, to show the effects produced upon them, which you are at liberty to publish for the benefit of your readers. If others similarly situated will do the same, we shall soon gather a large fund of reliable information upon grape culture which will be of great value.

The following I class as *perfectly hardy*, exposed to the open air, tied to a trellis, and not protected in any manner. They are three years old, and grew last year strong, healthy wood, which was pruned down to four feet last fall, and intended for fruiting in 1861:

Clinton—wood of last year's growth, 15 feet, very strong, ripe early. Now green and healthy to the ends.

Hartford Prolific—growth 10 feet, strong, ripe wood. Uninjured.

Concord—growth 15 to 18 feet, strong, vigorous, ripe wood. Uninjured.

Perkins—growth 20 feet, robust, extra large ripe wood. Uninjured.

Early Northern Muscadine—growth 16 feet, strong and vigorous. Uninjured.

New Native of Orange Co., (described elsewhere.)—Fruit ripened the first week in September, and the wood fully ripe to tips by the first of October; exposed to twenty-nine and a half degrees *below zero*, as indicated by a registering thermometer. Uninjured.

The following I class as *half hardy*. The fruit for 1861 is entirely killed; but ordinarily they stand our severe winters, and bear fruit. I have found, however, that whenever this class of vines are laid upon the ground and covered with earth, the fruit of the following season is fine, and ripens several days earlier than if exposed on the trellis during winter: *Isabella*, *Catawba*, *Diana*, *To Kalon*, *Union Village*, *Garrigues*, *American Hamburg*, *Hyde's Eliza*. My advice to cultivators north of Maryland is, to cover these varieties every fall.

The following varieties I find were covered purposely, or by accident, and of course are in good order now: Delaware, Anna, Rebecca, and Lenoir.

[The above statistics are of much value, and we should feel obliged to any of our subscribers who can furnish carefully collated observations on the same subject. We have seen the "oldest inhabitant," and he told us confidentially that the cold was the greatest he had experienced during his long life. He said, moreover, that the weather was "very queer;" by which he no doubt referred to its extremes and sudden changes. The weather last fall was unusually unfavorable for the ripening of wood, and the winter exceedingly trying; under the operation of these two causes, the destruction has been great. When it is understood that it is not the simple freezing that does the mischief, it will be easy to comprehend why Mr. Cornell's vine on the north side of his barn escaped. There are some kinds in your list that might have been injured without much harm to any body. In a locality quite as cold as yours, and much more trying, we recently examined a number of kinds, and found uninjured, the Diana, Delaware, Concord, and Hartford Prolific. The Isabella, Catawba, and Rebecca were killed "root and branch."

THE UNION VILLAGE GRAPE.

(See *Frontispiece.*)

BY THE EDITOR.

OUR *Frontispiece* this month is a very fine bunch of the Union Village Grape, from a specimen grown by R. S. Skeel, Esq., of Newburgh. This grape is a seedling of the Isabella, and was originated by the Shakers of Union Village. Mr. Longworth, we believe, first brought it to notice, and it has frequently been described. The vine is a vigorous grower, making handsome, short-jointed wood. The whole plant, indeed, wood, leaves, and fruit, are of unusual size. The bunches are the largest and most showy of all our native grapes, unless the Ontario should prove to be distinct and share this distinction with it. The bunch is compact, and often shouldered, and the berries well covered with bloom. It is sweeter and better than the Isabella in quality, and at least a week earlier. The vine, when young, does not in some places fully ripen its wood to the end, in consequence of its rampant growth, and may need protection; but generally we think it will prove hardy when the vine has attained a little age; certainly as hardy as the Isabella.



FERNS. REMARKS UPON RAISING FROM SPORES, ARTIFICIALLY AND OTHERWISE.

BY DANIEL BARKER, HARTFORD, CONN.

As many of the finest perennial, and all those with an upright rhizoma, with the annual kinds, can only be propagated from spores, I will point out the ways by which we have been very successful with most of the delicate and rare kinds, both of the tropical and hardy varieties.

A seed pan (size immaterial) is filled to within one inch of the top with rotten wood and sphagnum moss, upon which is placed half an inch of light loam and leaf mold, with a liberal mixture (say one-fourth) of sharp sand, and a portion of sphagnum mixed up with the soil. When the pan is prepared, let it be well watered, and left in a shady place for several hours; after which the spores may be scattered upon the surface. The pan should then be placed under a hand or bell glass, (in a shady place in the hothouse,) and as much air excluded as is practicable by packing wet sphagnum round the bottom of the glass. Managed in this manner, the surface of the pans will not require watering for a considerable period, which will be found to be a great advantage, inasmuch as by frequent waterings many of the spores are disturbed and destroyed. It is very desirable to water as little as possible until the spores appear in the "Marchantia" form; bearing in mind that the soil must never be allowed to become dry, as that would be *certain destruction* to many of the more delicate kinds, after having been subjected to a damp atmosphere for any lengthened period. Under the above treatment, more especially if the spores have been recently taken from a green specimen, most of the kinds will be certain to grow, notwithstanding twelve months may elapse before some of them may germinate.

Another method, and by which we have raised thousands, is to take some seed pans, in which place some half-decayed pieces of wood or bark, with a portion of soft friable loam and sharp rough sand well mixed together, placing them in any shady part of the house wherein ferns are grown, being careful to keep the surface always damp, and the spores, which are constantly flying in all directions about the house, will germinate from time to time upon the surface of the pans, without any further care whatever. We have been successful in propagating many of the more rare and delicate species by this method, when all other efforts have signally failed.

A CONTINUATION OF A FEW SELECT KINDS WHICH REQUIRE THE TEMPERATURE OF THE GREENHOUSE.

Adiantum capillus veneris; *A. Mortzianum*; *A. pedatum*. This last is one of our most beautiful native ferns, and one of the most graceful when under a good state of cultivation, either in the temperature of the greenhouse or hothouse, or in the portable plant case. *A. reniforme*; a very remarkable kind from the Peak of Teneriffe.

Asplenium appendiculatum; *A. dimorphum*; *A. obtusum*; *A. flabellifolium*; *A. lucidum*; *A. septentrionale*. *Botrychium lunaria*, (*Osmunda lunaria*.) *Cheilanthes Alabamensis*; *C. fragrans*; *C. tenuifolia*. *Gathea dealbata*; *G. medularis*: two very interesting and beautiful ferns from New Zealand; somewhat rare. *Cystopteris bulbifera*, (a particularly interesting native fern;) *C. regia*. *Davallia Canariensis*—the singular and beautiful Hare's-foot fern from the Canary Isles; *D. pyxidata*. *Dicksonia Antarctica*; *D. lanata*. *Doodia aspera*; *D. Blechnoides*;

D. caudata; indispensable to the most select collections. *Glechomia dichotoma*, (rare.) *Goniopteris pennigera*. *Gymnogramma leptophylla*; *G. rutæfolia*. *Ibymenophyllum dilatum*; *I. Tunbridgense*; exquisite. *Lastrea decomposita*; *L. cristata*; *L. glabella*. *Lomaria Alpina*; *L. discolor*; *L. lanceolata*. *Niphobolus rupestris*. *Notholæna Canariensis*; *N. lanuginosa*. *Phegopteris alpestris*; *P. dryopteris*; *P. rugulosa* (rare); *P. vulgaris*. *Phymatodes Billardiera*. *Polystichum aculeatum*; *P. aristatum*; *P. falcinellum*. *Pteris Cretica*; *P. longifolia*.

The above is a selection of a few of the most interesting and easily cultivated of this beautiful class of plants, which will flourish in the temperature of the greenhouse and conservatory. Much might be said in detail upon the elegant forms, native habitats, etc., of the above named genera; but to enter upon full particulars of each would occupy more space than in all probability would be allowable. Suffice it to say, the selection is very choice, and may be thoroughly depended upon.

Meanwhile should any of the readers of the **HORTICULTURIST** require any additional information respecting the above, or any of the exotic kinds which may hereafter be named by ourselves in the **HORTICULTURIST**, such information will be cheerfully given, privately or otherwise, so far as our practical experience will enable us to do so.



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

SEEDLING VERBENAS.—The seedling Verbenas received last month, for which we gave credit to Mr. Pentland, (and which he disclaims,) were from Mr. Dreer, as we have since ascertained. Mr. Dreer will please accept our thanks, and excuse the mistake inadvertently made.

BRIGHT'S GRAPE-CULTURE.—We learn that Mr. Bright has in press a new edition of his work on the grape, which will contain some forty pages of additional matter, developing some new views on his favorite subject. We shall look for it with much interest. It will be for sale by Saxton & Barker, 25 Park Row, New York.

SEEDS FREE.—It was recently stated by one of the members of the Farmer's Club that Mr. I. W. Briggs, of Macedon, Wayne Co., N. Y., was engaged in the seed business. This is not so. He distributes seed free, and much better than can be got through the Patent Office. Those we received last year gave us much satisfaction. By sending a postage stamp, (three cents,) he will return you seeds such as you can not very easily get elsewhere, many of them not being known to our seedsmen. He competes with the government, and thus far has the best of it. We mean to try him again.

ILLINOIS STATE AGRICULTURAL SOCIETY.—This Society, at its annual meeting, appointed Chicago as the place for holding its annual Fair for 1861. The cash premiums amount to \$20,000. That sum ought to insure a good show, if all the other arrangements are made in a like liberal spirit.

PROGRESSIVE GARDENERS' SOCIETY, PHILADELPHIA.—The stated monthly meeting of this Society was held at Druids' Hall, on February 11th; the President in the chair. Communications were read from J. W. Degraw, Esq., Brooklyn, N. Y., and Dr. Geo. Pepper Norris, Wilmington, Del., and ordered to be inserted on the minutes.

The election of a Secretary for 1861, which had been postponed, was taken up. Before resigning, R. R. Scott made some remarks respecting the motives and objects of the Society, and nominated Wm. Saunders for Secretary, who was unanimously elected.

Rotation of Crops in the Esculent Garden.—This subject had been set apart for consideration, and James Jones, gardener at Girard College, read the Essay, which was afterwards discussed by Messrs. Saunders, Stephens, Miller, Eadie, Pettigrew, Lazenby, Scott, and others. The principles on which the rotation of crops depends were fully explained. Mr. Jones laid down his own mode of operation, which was, to divide his ground into five portions, reserving one-fifth for the permanent roots, such as Rhubarb and Asparagus. The remaining four parts were managed by a four-course shift, with mixed culture. The four main crops were—1st year, Potatoes and Turnips, followed by Cabbages, &c.; 2d year, Corn, Squashes, and Pump-

kins, with *Lima Beans*, *Lettuces*, *Cucumbers*, and *Radishes*, as intervening crops; 3d year, *Peas* and *Onions*; and, 4th year, *Parsnips*, *Carrots*, *Salsify*, and deep-rooted plants, with minor crops intervening. The entire routine of culture was clearly laid down, and the method satisfactorily shown to be at once convenient and profitable. Should you desire a full report, it is at your command.

The next subject for the consideration of the Society, at the stated meeting of March 11th, is, "Propagation of Plants by Cuttings." Our meetings are open to all, and all interested are invited to take part in the discussions.

[We should be glad to have the discussion.—ED.]

SEEDLING POTATOES.—The following extracts from a letter from a friend who has had large experience in raising seedling potatoes, will be read with interest:

"There are few things eatable better than a good potato, and nothing worse than a poor one. The poor bear quite too large a proportion to the good. Indeed, a great many people never saw a good potato. Their education in raising, or buying, or cooking, or eating the potato, has been sadly neglected. There is no one branch in agriculture in which there is more room for improvement, than in the cultivation of the potato. It is an article that may be immensely improved to the great advantage of all classes, consumer as well as producer. By being made better, it will become a larger article of food. To this improvement are needed a knowledge of the constituent elements of the potato, and its careful cultivation by the light of this knowledge. Cultivation comprehends it all, and will do the thing. Careful and intelligent cultivation will improve any variety, while careless and ignorant cultivation will spoil any of the best varieties.

"There are but few know how a new seedling potato is produced, nor the trouble and expense to perfect them. The seeds of the potato-balls are first planted in a hot-bed in early spring, and transplanted at a suitable time; and they produce small potatoes, in size of peas to walnuts, of as many varieties as seed planted the first year, and these are planted again and again, till the fourth harvest; then those that promise well are selected and the others thrown away. Those that look and yield well, are not always good for the table; and now comes the planting to test the table quality—the fifth. It very seldom happens that the three most important points of a potato are combined all in one potato—healthy, productive, and good for the table. Such is the case with the new Bulkeley Seedling, as testified to by all who have raised and used them. But few potatoes have given so much satisfaction. The yield the fifth year was 544 bushels per acre, and the sixth year 1860, was 584 bushels per acre, perfectly free from all disease, and will now rank with any potato on the table, in flavor or being dry and mealy."

PATENT OFFICE REPORT FOR 1859.—We have already announced the receipt of this Report, with an intimation of further notice. We turned the subject over to a friend of leisure, whose criticisms, somewhat sharp, but to the point, we herewith append. We have long been of opinion that the appropriations of seeds, etc., have been abused, and that a reform was much needed. We hope the new head of this department will make it.

"There is so much to be said about the use of money appropriated by Congress for the advancement of Agriculture, that we are almost forbidden to mention the subject for want of room, but we feel impelled to say something at this time.

"The following resolution passed the House of Representatives June 18th, 1860: '*Resolved*, That there be printed, in addition to the usual number, three hundred thousand extra copies of the Report of the Commissioner of Patents on Agriculture, for the year 1859; fifteen thousand of which shall be for distribution by the Interior Department, and two hundred and eighty-five thousand for the use of the House of Representatives.' We do not for one moment doubt that

even this loosely gotten up report would be of great value to the farmers and gardeners of the United States, did any considerable number reach them. We speak but well-known facts when we say that thousands of these books are given to men who do not care a straw for agriculture. They are laid away and forgotten, with other rubbish of the house or office. Others of these books, printed at public expense, and intended to be handed directly to those to be benefited, are sent to book stalls in the cities and sold for a mere song. There are hundreds suffering for the need of aid in agriculture who can not get even the pittance of one of these Reports. We are not habitually given to fault-finding, but the evils connected with the use of the moderate sum appropriated by Government are so great, and the money falls so far short of accomplishing its purposes, that we feel anxious to do our share in lessening the former and insuring the latter.

"Commencing in 1839 with an appropriation of \$1000, the Government increased this to \$105,000 in 1856, and reduced it to \$60,000 in 1858. A considerable portion of the money was expended for ordinary seeds and plants well known in all parts of our country. The mails have been burdened with packages of seeds which could be duplicated in almost every grocery store in the Union. We have received from the Patent Office quantities of China, Refugee, and Kidney Beans, various sorts of Peas, etc., of good kinds, but which, being easily procurable almost every where, there existed not the slightest reason for using government money to send out and distribute. Some very poor seed has been enveloped and sent out, as well as seed quite too closely related by admixture with seeds of plants known to all good gardeners and farmers as weeds. These latter *may have* their uses, but they are not so well understood as to make us believe that government money should be appropriated to disseminate them. Good and valuable seeds also have been sent out, but the quantity has been too limited in proportion to commoner sorts so industriously distributed. Of the better sorts, may be mentioned wheat, Sorgho, and some kinds of grasses. None can deny that the Government has done much to advance agriculture by means of these annual appropriations, but not a tithe of what it should have done. Can we forget the fate of the Sugar Cane appropriation, and the stupid blunders connected with the attempt to renew the supply of cuttings in Louisiana ?

"Even so small a matter as the Drainage of a marshy field is so blunderingly conducted, that from the Report of 1859 we learn that, 'unfortunately, there was a want of adaptation in the manner of laying the tiles upon the yielding, marshy base, and the continuity has consequently been interrupted by occasional depressions.' Nor is this all. In the Report for 1858 we learn that, in order to secure to the people of this Union many valuable plants and seeds brought from abroad, and to propagate many found at home, a propagating house was built, but in such a manner as to put to shame any projector who has the slightest knowledge of what a propagating house should be to secure the best results. The house was made eleven feet high at apex, with the central roof opaque, so that plants have the sun but a portion of the day, proving detrimental to the tender ones, the height at the center forming with low sides a steep roof, which has the effect of 'drawing up' or 'spindling' the plants. Then as to heating, how little credit does the plan adopted reflect on those having the direction ! None but the crudest cultivator would think of employing coarse materials to make up by their fermentation the heat essential to the development of a seed or cutting into a healthy plant. It is true that plants have been grown to be distributed, but they are not samples of the very finest plants, such as could have been grown by the use of a genuine and well-regulated propagating house, such as should have been built as a sample to every propagator who chose to examine it.

"According to the description given in 1858, in cellars beneath the house was placed one foot in depth of dried Chinese Sugar-cane stalks; over that ten inches of horse manure. The Report of 1859 says, 'Decomposing vegetable matter, covered with a portion of nitrogenous material, might be adapted to general use, were the process of decomposition susceptible of being controlled at will; but so variable is its progress, and so dependent upon external influences, in a

ratio inverse to the requirements within, that the vicissitudes of temperature proceeding from it are such as none but hardy plants can endure. The volatile emanations are likewise in excess in this process, insomuch that even those plants which become accustomed to, and prove capable of sustaining an atmosphere so highly stimulating, may suffer when suddenly withdrawn from its influence and exposed to the open air.'

" What excuse is there for all these blunders? Why need our Government be so blind to its needs when it authorizes the expenditure of money? Shall we answer, because in the whole Union there are no men capable of selecting and disseminating valuable seeds, draining marshy lands, and erecting propagating houses, preparing soils for feeble plants, and seeds that healthy plants may be reared? Can it be said that there does not exist a decent house in the Union which could serve as a sample? Are there no architects here capable of giving a plan of just the house needed? If not, would it not have been well to look over into the houses of France and England, which have been built for the propagation of plants from every clime? These are vital questions, and should be answered practically. Why should abuses be tolerated in government enterprises intended to benefit the people, which would not be endured in private establishments? Let us then tolerate no shams in this matter. If we are to be benefited by money given by the general government, we demand that this money be expended so that it reach the parties to be benefited.

" We are glad to note that Commissioner Bishop wisely recommends that the sending out of other than new and rare plants and seeds be discontinued, and we feel that other improvements will follow on the heels of his suggestions. Among other things, we hope that the Report will be gotten up with greater care, trimming down verbose statements, having less personal details and more positively valuable material. The essays on animals, insect pests, plants, and meteorology in the last few volumes of Reports, are valuable to the cultivator, but there is much that might be omitted.

" We learn that in the gardens at the capital there are 32,000 plants of Tea shrub from China, 250 plants Cork tree, (*Quercus suber*), 5,000 plants Mahonia, (U. S.) 1,000 plants Seedling Strawberries, 200 plants *Virgilia lutea*, (Tenn.) 21 plants Camphor tree, (Japan,) 100 plants *Pinus edulis*, (Oregon,) 50 plants Sycamore fig, (Palestine,) 1,500 Arbor Vite, (China,) 150 plants *Rhus succedanea*, Wax plant, (Japan,) 50 plants Tung Oil-tree, (Japan,) Oodung and other ornamental trees from Japan, *Olea fragrans*, (used for flavoring tea in China,) 25,000 plants Grapes—seedlings and rooted cuttings from about fifty varieties of foreign and native grapes. It is proposed to attempt to get hybrids from the best foreign and our native grapes to secure a grape better adapted to the manufacture of wine.

" Quite a list of seeds is named, also plants, from Palestine, which are to be experimented on.

" The Historical Sketch of the United States Agricultural Society is in good form for preservation, but he who would be fully informed of the GRAND SHOWS AND TRIALS will be obliged to trust to the newspaper reports or to his own memory.

" Considerable space is devoted to 'Grapes,' which we will review hereafter, as there are some curious statements made therein. We must also defer notice of articles on Ionian Islands, Fertilizers, etc., to some future time."



Correspondence.

IMPORTED ROSES.—MR. EDITOR: We did not expect that our article in the March number of the HORTICULTURIST on imported roses, would meet the approbation of all dealers; but we certainly did not expect an opponent from such a quarter; for we supposed that a man situated like Mr. Bridgeman, was better posted as to what was going on in his own country, and especially in his own State.

His first question is, "What nurseryman or florist neglects to produce Roses himself, and thus allows his simple vanity to get the better of his judgment?" I know of no one better able to reply to this than the gentleman himself, for he acknowledges that he imports roses for his customers. But we ask the gentleman's pardon for using the word "vanity," it should have been "ignorance."

Second. "Have not American Roses of decided merit, brought as good prices and as ready sale as new French Roses?" So far as prices are concerned perhaps they have, but they have brought no better prices than new Roses in Europe. But as to rapid sales, it is very doubtful whether there are more than one or two instances where there has been received by the producer anything like a fair remuneration.

The gentleman says that he receives new Roses in limited quantities among his importations without extra charge. Did he ever know an American nurseryman refuse to put in a limited quantity of new Roses without extra charge, provided he purchased by the hundred or thousand? We have not yet learned that French nurserymen were any more liberal to their patrons than American nurserymen.

Third. As the gentleman seems to doubt there being a place in this country where Roses can be procured of the leading varieties in quantities; we beg leave to state that we know of several, and we will name one in particular, who propagated one hundred thousand last season, and had forty thousand on hand at the close of the season, just because such men as Mr. Bridgeman import Roses instead of buying them at home. We refer to Messrs. Ellwanger & Barry, of Rochester. As to quantity, quality, or choice varieties, we refer the gentleman to their catalogues or to their grounds.

Further, they have been selling these Roses at \$160 per 1000, which is less than the price stated by us, and less than Mr. Bridgeman says he can import them.

If Mr. Bridgeman will send his orders to Ellwanger & Barry, one, two, or three months in advance, the same as he has to in sending to France, we think he will find his orders filled promptly, and with chioce varieties; those known to be good of all classes.

Fourth. "Where can Roses be purchased for seven cents apiece in France?" Well, we thought we would tell, but upon further consideration we think we had better not, as we may make something out of gentlemen who *pretend not* to know; but certain it is that Roses have been and can be still bought in France at that price, and almost every season for four cents. If Mr. Bridgeman doubts us we will give him the names of several gentlemen who will import them for him at seven cents; he of course paying freight, &c.

We have always objected to putting down the price of nursery stock of any kind, and we thought that our statement was high, and on some items, nearly double what it sometimes costs; for instance, freight from Havre to New York, was per steamer, when very few import by steam, mostly by sailing vessels, which costs much less.

Mr. Bridgeman is curious to know what I mean by Angers being the Rochester of America, why simply that Angers is supposed to be the great nursery depot of France, and Rochester the great nursery of America, as well as the largest in the world.

As to any nurseryman in this country supplying 20 to 200 of one variety, and to allow the purchaser to name those varieties, and certainly if he ordered one or two hundred of each, there is probably no nurseryman in this country or in Europe, that could fill such an order without buying of his neighbor. We doubt very much whether Mr. Bridgeman ever had an occasion to give such an order. And we wish the gentleman to understand that we do not say that Roses can be purchased in France at \$70 per 1000, if the nurseryman is restricted to certain varieties, neither can he purchase large, strong plants of Hybrid Perpetuals in this country for \$160 per thousand, under the same rule. But if he gives his order for so many thousand Roses, assorted varieties, then they can be had here at \$16, and in France at \$7 by the thousand.

ANDREW S. FULLER.

MR. EDITOR:—At what price would it be profitable to purchase bones per pound as a fertilizer? We are frequently urged to save and collect such materials, and prepare them for the improvement of certain crops. I presume many of your readers would be equally pleased to receive a direct, practical answer to the above question. If it will pay to take the trouble to gather the bones scattered over a farm or about a town, it must be economy to pay *something* to have them collected to order.

Very respectfully,

N. Y., April 9, 1861.

A SUBSCRIBER.

[At the rate of \$30 per ton, it will pay you to collect all the bones you can find. Bones about the farm or the town, or from the butcher, are worth a good deal more than the crushed or broken bones usually bought at factories, since the latter have in most cases been boiled, and have thus parted with important elements of fertility. Our advice to you, and all others is, to collect all the bones you can find.—ED.]

PETER B. MEAD, Esq.—At our last interview you urged me to describe a grape which has come under my observation the past year, in the neighborhood of my residence. My unwillingness to do so heretofore has been from a desire to make further examination of its habits, so as to preclude any error or mistake in its description.

The vine is a native seedling, *Vitis labrusca*. The wood casts its bark in long strips; it has enormous tendrils of sufficient strength to bear the weight of a man; is of a dark mahogany color; compact, hard, close grained, medium jointed, ripening to the topmost shoot before frost in 1860; propagates readily. Leaves large, three to five lobed, heart shaped, strong nerved, yellowish green above, tomentose or woolly beneath. Bunches large, very compact, and shoulered, (resembling in form the engraving of the Delaware published by Dr. Grant,) weighing from half a pound to one and a quarter pounds. One bunch measured by me was in length six and six-tenth inches, in breadth four and seven-tenth inches, and contained about one hundred berries. I did not count them. Berries dark blue or purple, large, round, holding firmly to the bunch; sweet, juicy, with an aromatic flavor. Skin thin, with fine bloom, dotted with lighter spots, easily removed by the touch. Flesh free from woody fibre or toughness. No mildew or rot visible. Ripening from third to tenth September, 1860, a wet season, when cultivated varieties generally did not ripen.

This vine grows in a swale on the north side of a stone wall, elevated say four hundred to five hundred feet above the Hudson River; is protected on the west by very high land, the sun rising on the twenty-second of November twenty-seven minutes later and setting one hour and fifteen minutes earlier than on level land, reducing the day from nine hours and thirty-four minutes, to seven hours and fifty-three minutes at that point, a difference of one hour and forty-two minutes. The situation is exposed to cold north winds. The thermometer indicated twenty nine and a half below zero on the thirteenth of January, 1861. The latitude is about forty one to thirty North.

The age of this vine is about seventeen years. It has borne regular crops of fruit for fourteen years without fail, and has never been manured, cultivated, or protected.

In 1859 the crop was one hundred and fifty pounds. During the fall and winter following, the water found its way along the old wall, and washed the earth from this vine so as to lay the roots bare. The product of 1860 was about one hundred pounds.

The soil is strong loam, about four or five inches, with a sub-soil of clay intermixed with gravel (broken stone) and friable sandstone five or six inches. Under this is rock and hard pan.

The wood is now in the hands of a propagator, and as soon as I am permitted to do so I shall be pleased to place one of the roots in your possession, that you may compare it yourself with the varieties which you are cultivating.

My comparison of temperature on the thirteenth of January, between the situation of this vine and at my house, shows a difference of eight and a half degrees colder, which may be accounted for in the fact that there is about one and three quarter hours less sunshine during the day.

Yours most truly,

Mortonville, Orange Co., N. Y.

W. A. WOODWARD.

April 10, 1861.

[Thank you for your description. In some respects it reminds us of the Union Village. Its hardiness seems to be undoubted. We shall be obliged to you for the vine; but, in its season, be so good as to send us a bunch of the fruit. With the above came a request that we would give the grape a name. It having originated on the Woodward farm, we accordingly exercise our prerogative, and name it the *Woodward Grape*; a name on which we hope it will cast no discredit. Our readers shall have our opinion of it when we receive the fruit.—ED.]

MR. EDITOR:—I sent you an article some time ago in reply to Mr. Veitch, and since then I see in the HORTICULTURIST for April, an article from Mr. Henderson, of Jersey City. The article in question covers the whole ground of both their remarks; for they both unknowingly admit that I am in the right; and had they understood the article in question, they could not have found any fault with it. There is one remark of Mr. Henderson's that I must reply to by your permission. With regard to my catalogue and the "European" varieties therein mentioned, I did not condemn all the foreign varieties, by no means.

Again: I am not so green as to throw away the *names* and *varieties* while the *public taste* *panders* to them, and until we can change this "opinion," shall still keep them; but I would say that, when my customers send for Verbenas, (unless they select them,) I send very few of the *foreign* ones, unless *superior* to others of AMERICAN growth; for I grow very many not upon the catalogue, and many now there I have but a limited number of. Then, I assure you, I perhaps import as many as Mr. H., but find so few worth retaining, I shall not import many more.

With regard to the Verbena degenerating by growing from cuttings, it is simply absurd for Mr. H. to state such a thing. If such is the case, why are not those *very old varieties* mentioned by him, totally lost sight of? for they have been propagated *ad infinitum* to the present time. So he might say of any other plant, it degenerates by being grown from cuttings. That won't do, Mr. H. It may be the case with those "European varieties," but not so with the American.

Mr. Editor, the whole secret is this, there is money made out of those imported varieties, and John Bull gets the blame when they are not good, because the responsibility is thrown upon him; for he describes them, and not us; but when we send out one of our own, we have to take the responsibility.

[The Verbena question will come right yet. We have no words but those of commendation for a meritorious plant, no matter where raised; but we think that, as a general thing, no

adequate encouragement has been given to the production of American seedlings. We may differ as to the cause of this, but the fact is patent enough.—ED.]

EDITOR HORTICULTURIST:—The peaches in this neighborhood, which is along the bay, have not been hurt by the winter; but west of here I understand about half are killed. This reminds me of an article that was going the rounds of the papers, saying that to always have a crop of peaches was to graft on the plum—would this hinder the peach which forms in the fall, from freezing in the bud?

About fifteen years ago, our people commenced stripping the Damson-trees of their fruit in a green state—now we can't raise them for the black knot—can't say that was the cause—but we had fine healthy trees previous to that time, and plenty of fruit.

Is there such a thing as an apricot turning to a pear? A neighbor of mine tells his tale—that he planted some seed of the apricot. Some few years after he moved, and took with him the trees, which were in bloom at the time; of one these the top died, and sent up a shoot from the root which proved to be a pear, which fruited the third year; nearly a Seckel, with few seeds and hardly any core. The pear may improve as the tree gets older. This tree is opposite my window; saw it when it was planted; is a very handsome tree; the owner refused ten dollars for it at three years' old; and I would like to believe that it came from the root of the apricot, if I knew that such a thing had ever happened before.

Yours truly,

PLEASONTON HAMON.

Near Dover, Del., Feb. 25, 1861.

[Grafting on the Plum will not save your peach-buds from freezing. There is no such thing as an Apricot turning to a pear; and if your neighbor is nursing his tree with that idea, he is nursing a great delusion. Natural laws are fixed beyond all such changes as that.—ED.]

MR. ERROR:—There is scarcely a horticultural journal I receive that does not contain many complaints from different sections of the country, of the difficulty of making Roses live and bloom the first year. Those complaints are generally made by novices, who think the Rose should grow like a hill of corn. Once planted, he expects a crop; but this is not so. Roses require a little more attention than many bestow upon them. Now let us take a look at the other side of the question. Roses are grown in greenhouses, in temperatures sometimes from sixty to ninety degrees. Those plants, in fact, are not fit for growing out of doors. Although they may not die, their growth is frequently so much checked that the growing shoots make but little progress after their first flowering. Roses as well as all other hard-wooded plants for outdoor cultivation should be grown in a low temperature, not over sixty degrees. But here is a difficulty: nurserymen, the greater part of them in this country, generally employ inferior gardeners, because they work at low pay, thereby saving the cent and losing the dollar. Let them take a glance at gentlemen's private establishments in every part of the country, where the best of gardeners are employed, and see how many there are daily flocking there begging to purchase plants and fruits, while the neighboring nurserymen have the same varieties, and little inquiry for them. Nurserymen would not engage a gardener from a private situation, because he could not understand nursery business. They are at a loss to know the difference. Gardeners coming to this country can not wait five years for a nursery situation; they have to take hold of the first they meet, thus leaving the best of them in private situations. Perhaps it would be well to mention, that like mechanical trades in this country, the learners become gardeners in two years. There are many such coming along in our day. These are the men that cause so many complaints of the failure of plants. A man can not become acquainted with gardening in a few days, nor can he become a phytologist. All gardeners who learn their business in Europe must serve their time in a nursery, otherwise they can not understand gardening to perfection. Perhaps it would be well to mention what difficulties they have to surmount in order to

become masters of their profession. First, when a man is recommended to become a gardener, no matter if his father was the Lord Mayor of London, he has to humble himself to the position of a working man : he must take to the spade and first learn to trench ; after that he must learn to grade, mark out walks and alleys ; then he must join the working men in the bedding-in of all kinds of plants and trees ; again, he is sent to tie after the budder and grafter. In rainy days, during this time, he is sent to the shed making *Agaricus campestris* or *Mushroom* spawn ; also the making of labels, &c. Next, he is taken to the packing sheds, from thence to the herbaceous grounds, then to the flower garden, thence to the compost-house, and then takes a step into the viney. Next comes his turn to the greenhouse, and lastly to the propagating house, where he finishes his long term of seven years. There a man can not become a professor in two years ; but in this country there are many, who do not know the differences between common soils, who are still gardeners, and perhaps writers for some of our valuable journals.

I have perhaps exceeded the proper limits on these simple matters. At some future time I will say something on the subject of Plants. I suppose it is time that a subscriber of three or four years' standing should say something, or trouble his editor a little. The above is a hint to those persons who wish to employ first class gardeners, and only offer them \$25 per month.

Limerick, Maine.

JOHN C. RILLY.

[You have opened a prolific subject, which might be profitably followed up. Perhaps some of our correspondents would like to continue it pro and con. We shall be glad to hear you speak on the subject of plants.—ED.]

EDITOR OF THE HORTICULTURIST:—The "Large Early York" and "George IV." Peaches are identical. The tree which Michael Floy cut the buds from, in Mr. Gill's yard in Broad Street, New York, and re-named George IV., was sold to Mr. Gill under the name of Large Early York. The Peach is a seedling of the *true original* Red Rareripe, (Morris Red Rareripe of Downing,) and was originated from seed by my grandfather. It has *globose* glands, and small pale flowers.

The original Red Rareripe is a seedling of the *Grosse Mignonne* of France, and was grown from seed brought out by emigrants at the revocation of the Edict of Nantes.

The Early York and Red Rareripe of Downing are both serrate, (without glands,) and this Early York has large flowers, and are both misnomers, apparently of a distinct parentage, and are both distinct from the original varieties so long ago and so widely disseminated by my grandfather and father. Latterly the word "Large" has been added to the name, so as to distinguish it from the Early York of Downing's work.

My father sent the Large Early York to Wm. Forsyth, of England, about the year 1790. Mr. F. had then charge of the Royal Kensington Gardens, where this Peach received the new name of Royal Kensington, and in an after importation of fruit-trees, my father received back his old favorite under this new title.

It is a somewhat amusing circumstance that the Large Early York, when sent to the London Horticultural Gardens at Chiswick, received no special encomiums until it was afterwards sent there under the name of George IV., when it at once assumed an important position, and was announced as of very superior quality, and the best suited to the climate of England of all American varieties ; these remarkable facts not having been ascertained previously, although the same fruit had been growing there for many years under the unassuming and *less regal* name of Early York.

The original name, Early York, refers to New York. It was also called "Large Early," "Large Early Rareripe," and "New York Rareripe," and latterly has received the additional names of "George IV.," "Haines' Early Red," "Honest John," &c. It is a genuine American variety, whereas the Early York of Downing is supposed to be an imported variety.

Flushing, L. I., March 5, 1861.

WM. R. PRINCE.

[The history of this Peach, though not new to us, will no doubt be so to many of our readers. So, you see, Mr. Prince, there is something in a name, after all; and what was true in 1790 is true in 1861. It is to be regretted that our fruit-books pay so little attention to the glands, flowers, and serratures, in the description of Peach-trees. Mr. Prince's article has reference to the list of Peaches presented by the American Institute, in which the word Large is appended to Early York in parentheses.—ED.]

PLANT TREES.—**MR. EDITOR:** More than forty years ago a family of children visited their grand-parents, then living “*a great way out*” of the city, on the old post-road to Albany, or Bloomingdale road; and from the garden they carried some nuts; and, on their return home, a brother and sister planted each a nut, and each nut produced a tree. They were nursed and cared for as children will nurse and pet a favorite plant or shrub.

The trees thus planted are large and beautiful, and have produced great quantities of fruit for more than thirty years past. A sample of the last year's is herewith sent. The old mansion, garden, and parent tree, which were below the “great hill” (Murray Hill) of Manhattan Island, have passed away. The lady, once the sister-child—my wife—who planted and raised the tree, sends you this specimen of the fruit thereof.

Feb. 14, 1861.

P.

[For which we desire to return her our best thanks. The nuts referred to are Madeira or English Walnuts, which we found to be excellent. We almost envy the lady the profound pleasure she must experience in the consciousness of having planted the nuts which produced these trees. Let every body, even the children, plant a tree; and if they can not plant a tree, let them plant nuts.—ED.]

MR. EDITOR:—An effectual remedy for the ravages of the *Cerculio* on Plums, Apricots, and other fruits has at last been discovered by Mr. Wilson King, of Erie, Penn. It is this: smoke the trees from the earliest blossoming till the young fruit is the size of a common bean, (say six weeks,) with Coal Tar; smoke in a calm evening once in four days, ten seconds to each tree.

I buy at the gas works a barrel of the Coal and Gas Tar for \$1.50; and in the evening twilight, with a common foundry moulder's ladle containing two quarts of this tar, ignited with a match, I smoke one hundred trees (a few seconds to each tree) in half an hour; and not only cerculios, but caterpillars, and every thing of insect kind, are completely driven away. I have now tried it two successive seasons, and not a kernel of my fruit has been stung. Several of my neighbors, members of the Erie County Agricultural Society, at my instance, have applied the smoke to one tree and left another near it unsmoked, and in every instance the fruit of the smoked tree was saved and the unsmoked lost. Through your widely circulated *HORTICULTURIST* I desire to present this remedy to the public, satisfied that it is complete.

Very respectfully,

WILSON KING.

[In view of all the remedies proposed, the little Turk would seem to be destined to have little peace. We wish the little wretch would take it into his head to get disgusted, and leave for parts unknown, and never to be known. If he can stand the smoke of gas tar, it is more than we can; but then he has all the lives of a cat nine times multiplied.—ED.]

THE GARDEN OF AMERICA.—**MR. EDITOR:** In early colonial times Long Island was called the “Garden of America,” and was far-famed for its fertility and productiveness. The settlements on it were made at an early period, on both shores, on the east end and west end of the island, as the beautiful bays and harbors presented desirable places for settlement, and it was these shore settlements that gave to the island its great reputation; and it is a most extraordinary fact, that no great change has been made in the towns, villages, and hamlets since 1683—or

possibly some changes may have been made from that period to 1750. Most men suppose, or it has long been the impression upon the public mind, that the whole island is settled, or that all the land on it that could be cultivated, or can be cultivated, has long been cultivated or occupied. This is the general inference from the fact that it is the oldest settled part of the State of New York, off from the island of New York, and its proximity to the city, and the great facilities which Long Island affords for market. But this is a mistake; and it may surprise your readers to know that nearly one-half of the geographical surface of this most beautiful and highly favored island is yet a wilderness, and also to know how vast a "wood-lot" belongs to this old "Garden of America." The great central regions of the island are yet a wilderness—nearly as much so as in the days of the Indians, two hundred years ago; the wild deer yet roam "o'er these valleys and plains." Here, in the middle or central portion of the island, is a vast forest of more than forty miles in length from east to west, and from six to eight miles wide from north to south; and until within a few years there was not a single acre nor rod of cleared land, nor house, nor sign of a human habitation. A vast, lonely, and desolate wilderness, with no roads through it, or none that would be called roads in any other country, though traversed in every direction by *paths* or single tracks, just wide enough for a wagon to be drawn through the trees and bushes—they might be called *mono-tracks*; yet these passages or paths have been used as highways from village to village, from one shore to the other, for one hundred and fifty to two hundred years; and, as a general rule, during this long period of use, no labor or cost of consequence has been required to keep these paths passable. The roads in no other part of the State of New York could be kept passable for the same length of time, and by the same means, for it is, in fact, the finest road-bed that can be found any where. The question is at once asked, Why is it that this great tract of land—for it is land, real "*terra firma*"—thus remains neglected and unoccupied? Common fame answers, and says, "It is barren, worthless, and can not be cultivated." But this is not true. This great part of the island is geologically and naturally equal to any other portion of it of like extent. No facts have ever been shown to sustain the old notion of the barrenness and sterility of these neglected island lands; no examination of the land or soil has ever been made; no attempts to cultivate it, nor any part of it, have ever been made; in truth, no test whatever has ever been applied to it to show wherein it differed from all the rest or any other part of the island; and nobody knows of any of these things having ever been done. If so, let the facts be furnished; name the place, the time, and the men who have, by actual trial and test, ever shown the land to be barren. If there be any such men in existence on the island, or ever have been, let their names be given, and let the process be given, and the facts carefully set forth, as performed to test the productive quality of the land; then the public can judge whether the tests and trials have been sufficient to abandon, to throw out of use, and doom to perpetual sterility, more than a quarter of a million of acres of land in the ancient "Garden of America;" land, too, spread out at the very doors of these great cities, New York and Brooklyn, and with a climate for health and pleasure unsurpassed in this latitude. The late Benjamin F. Thompson, author of the History of Long Island, when asked for the facts upon which that portion of his history was founded, where he described that great central part of the island as "a vast barren plain," said he had none; that he knew of no attempts ever having been made to cultivate any of the land. The truth is, it is one vast garden by nature, though now a neglected bramble-field; "briars and thorns cover the face thereof," from long neglect, repeated cuttings of its wood, and by burnings. It was every where covered with a heavy growth of wood or woody products, and is now so densely covered with bushes, grasses, brambles, and young trees, that it is almost impossible for a man to get through it; indeed, he can not walk over large tracts of it out of the old cord-wood roads, or the *mono-tracks* heretofore described. There are none of the external attributes or appearances of barrenness or sterility on this great island wilderness. Not an

acre of land—scarcely a square rod of land, can be found between Brooklyn and Carman's River, the famous trout stream, a distance of sixty miles, that is not covered with heavy, rank vegetable matter, each acre requiring the removal of from twenty to forty tons of roots to clear it. No land that contains and sustains such growth of vegetation and vegetable matter from year to year can be barren, nor possess any attribute of barrenness. The same elements in the soil that will produce such an annual crop of vegetation, in the form of trees, shrubs, grasses, wild fruits, and wild vines, will, when subdued and submitted to the agriculturist and horticulturist, produce wheat and corn, and garden plants of every variety. There are thousands and tens of thousands of acres of the very finest of garden lands in these great tracts now totally wild; around the head waters, and along the borders of those beautiful island streams that rise in these central woodlands, there are hundreds of acres of the finest celery land. The entire surface of the tract between Brooklyn and Yaphank, or Carman's River, is covered with a fine, warm, genial soil, what in any other country would be called a yellow loam, and in its mechanical texture and friability is in the very best possible condition for culture, and to receive plants, seeds, and fertilizers. None of the land is any more sandy or gravelly than the lands of Flatbush, Flatlands, and Jamaica.

HORTUS.

DEAR SIR:—Being a careful reader of the HORTICULTURIST, and observing that you devote much of your valuable space to the very important subject of Grape culture, I take the liberty of addressing you with the hope of obtaining information on some points connected with that subject.

I live in Toronto, C. W., and have been for some time endeavoring to produce ripe grapes in the open air, but so far with very little success.

In May, 1859, I removed the earth from my vines, and nailed them up to a close board fence, ten feet high, facing the south. They were pruned on the "Long Rod" system, had been two years planted, and this (1859) the third season I concluded to let them bear a small crop. They broke beautifully, and by the fourth of June had made eight inches of growth, showing a profusion of young bunches. But on the morning of the fifth I found the vines quite destroyed by the frost of the past night. I at once cut them back to six inches of the ground, and at first I feared they would bleed to death; but by the first of July they had all thrown out good shoots, and in October I had strong, well-ripened canes ten feet long.

The spring of 1860 was very favorable, and the vines set their fruit well; but on the last day of September none of the bunches of the Isabella or Catawba were ripe, and the frost of that night rendered them quite worthless. I had previously gathered the fruit of some Clintons, which were quite ripe, and made them into wine. These vines were all on the same line of fence, and had every advantage: the border was twelve feet wide; a fine, deep, light loam, well manured, well drained, and hoed four times during the summer, no other crop being planted on it; a constant system of stopping the fruiting shoots was observed.

Now am I to conclude from this result that the Clinton is the only vine suitable to this latitude? It is a very large bearer, but the fruit is small and not fit for any thing but making wine. I should like to try some of the new grapes if I thought I had any prospect of success.

As a rule, Indian corn of all kinds will ripen in our gardens here, but last summer some early Sweet corn which I planted did not ripen a single ear. The season was the coolest I remember, and we had not one sultry night.

Hoping that I have stated my case in an intelligible manner, I remain, yours truly,

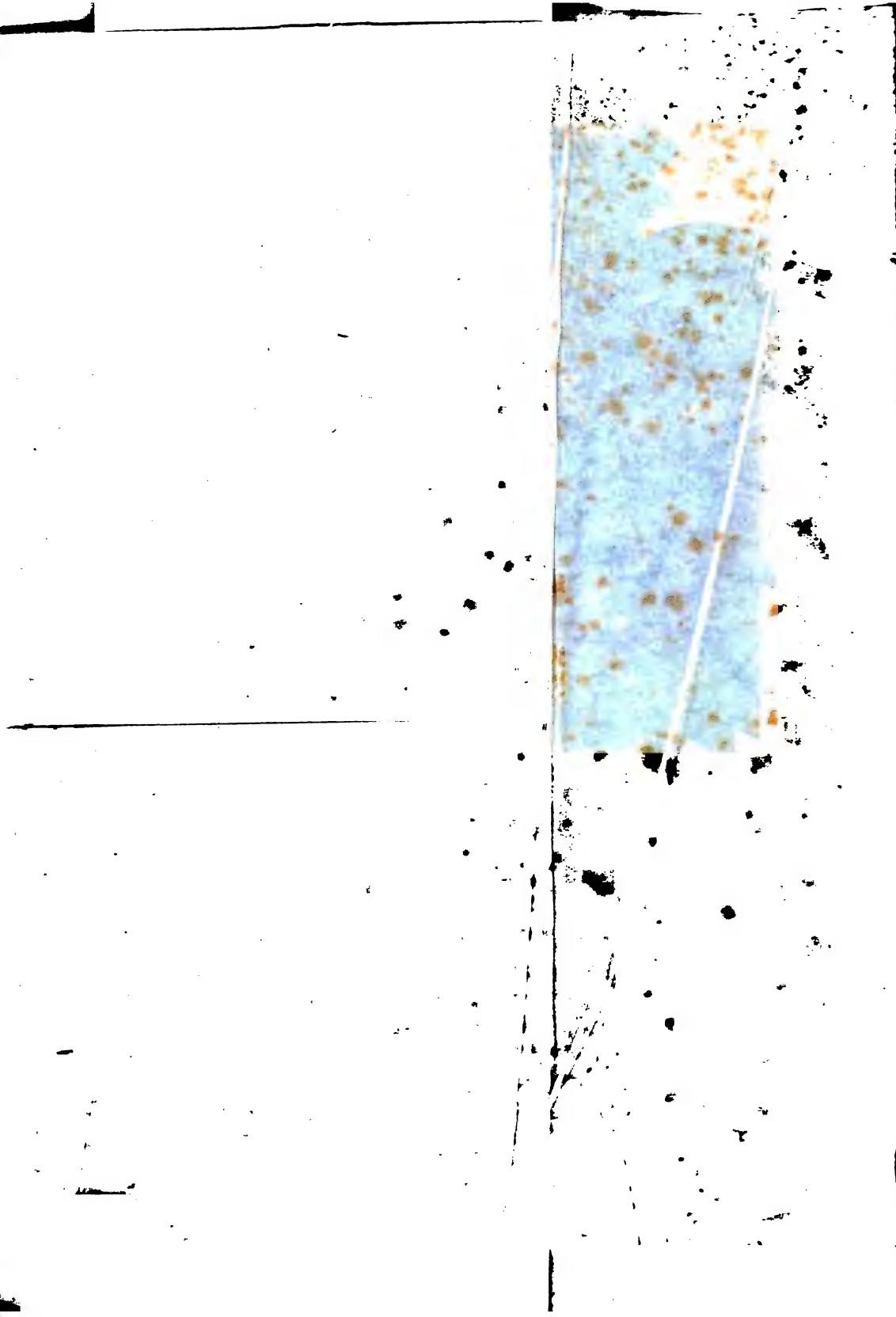
Toronto, C. W., Feb. 20, 1861.

ALPHA.

[We regret that the above, as well as others, should have remained so long unanswered; but for some time past we have been laboring in the midst of a Babel. Your case is very clearly stated. It would seem that every thing in the way of cultivation has been well done; but, with the varieties of grapes you have, the result would have been unsatisfactory if you had lived in a much more genial climate than Canada West. We think we can safely encourage you to go on. The Clinton is nowhere fit for the table. Abandon that, as well as the Isabella and Catawba; the latter is unsuited to your latitude. In their place put the Delaware, Diana, Concord, and Hartford Prolific. We have no doubt they will all ripen their fruit with you; at least with the slight protection we shall soon illustrate in one of our grape articles, which we hope you will read. Do not nail your vines to the fence, but have a space of six inches or a foot between the fence and the vines. We shall be very glad to help you.—ED.]







Hints on Grape Culture.—IV.



THE ground being now prepared for the reception of the vines, it becomes necessary to consider the best mode of planting them. The act of planting is one of the most interesting and important operations in the whole management of the vine; it constitutes, with thorough preparation, the foundation upon which the superstructure is to be reared; and the superstructure will prove durable and fulfil its purpose, just in proportion as the foundation is well laid. The functions of the root will occupy us at another time; at present, our object will be to get the vine properly in its place.

It is usually the case that a few general directions are given for all kinds of planting alike; but in our own practice we always make a distinction, which we shall here explain. Though the object is the same in all, the manipulation is somewhat different in each. We shall divide the subject into, 1. *Cuttings*; 2. *Layers*; 3. *Eyes*; 4. *Thomery*. If the ground has been prepared as directed, it will only be necessary to dig holes sufficiently large to receive the roots; if it has not been so prepared, it will be necessary to dig holes at least four feet square and two or three feet deep; or, better, a trench four feet wide. The ground between the rows can be trenched after the vines are planted; but it is always best to prepare the soil before planting. We shall suppose the ground has been prepared according to our directions, and proceed accordingly.

It is important that a bed of fine soil be prepared for the immediate reception of the roots; no raw or acrid manure should be allowed to come in contact with them. For this purpose we always prepare a compost. It may be composed of "rotted sods," old "headlands," or good garden soil, mixed with charcoal dust, vegetable mold, and a little fine manure, not less than two years old. This must be worked up fine, or passed through a coarse sieve. A peck or more of this compost should be deposited at each hole, or at intervals along the trench.

Being thus prepared, let us ascertain how *deep* the vines are to be planted. We have already entered an emphatic protest against deep planting; and we take occasion to repeat it. Except for the Thomery, the roots should be placed about four inches beneath the surface; in sandy, gravelly soils, they may be placed even six inches deep; but our general rule is, plant four inches deep. There is more danger of getting them too deep than too shallow. The reason for placing the roots at this depth will be given hereafter.

Now let us proceed to the act of planting, first, the *cutting*. Cuttings usually have two layers of roots; sometimes there are three, the third or bottom one being feeble, and often decayed. In all cases, cut clean up under the second layer of roots, shorten in all long, straggling, non-fibrous roots, and remove all that are decayed. The vine is now ready for planting. In the case of cuttings, the roots composing the *upper layer* are to be placed within four inches of the surface, and the hole must be dug deep enough to accommodate the lower layer. Spread an inch or so of compost in the bottom of the hole; with the left hand collect the upper layer of roots, and hold them up and around the stock of the vine; spread out the lower layer of roots, and with the hand, as the compost is added, work it in and around the roots, so that all interstices are filled in; next fill in with soil till the upper layer of roots is reached; then put in some compost, on which spread out the roots, and fill in as before. All this is really not so troublesome as it



seems ; it is, however, all things considered, much the cheapest mode of planting a cutting that we have any knowledge of, as it is by far the best. The usual practice is, to dig a small hole, crowd in the vine, and fill up so as to force the roots in a mass against the stock. The results in after years correspond with the planting.

Let us next take a *layer*. In this case the roots are disposed along a foot or more of the stock, and are inclined to be long and non-fibrous, as layers are usually made. They should all be cut in, and decayed portions entirely removed. Let the hole be sufficiently large to receive the roots when spread out, which, as before, are to be about four inches deep. Put in a layer of compost, and spread out the roots right and left, giving them, as you approach the collar of the vine, a fan shape, so that they spread at that point in all directions ; cover the roots with compost, working it in by hand as before, and then fill up with soil. The layer is thus planted.

The *eye* will next claim our attention. The operation is substantially as before ; the manipulation, however, is more simple, and the planting sooner performed. Prepare a hole sufficiently large to receive the roots. Shorten in and cut out decayed roots, as before directed ; in this case, however, there will be less root-pruning necessary, because a really well-grown eye is nothing but a mass of the most beautiful fibrous roots ; but all eyes are not well grown, and must be root-pruned accordingly. Put in a layer of compost ; spread out the roots in all directions ; cover with compost, and work in as before ; then fill up with soil, and the eye is planted. An eye can be planted in less than half the time of a layer or cutting.

We now come to the *Thomery*. This mode of planting embraces some peculiarities. We may remark here, that it is neither intended for nor adapted to the vineyard. Its proper place is the garden, or the wall, or the side of a house, barn, or similar position. At present we have only to do with the planting of the vines according to this system. We will suppose the border to have been trenched and prepared as heretofore directed. As the vines in this system are to be planted two feet apart, it will be necessary to dig a trench the length of the trellis or row, the trench to run east and west. This trench should be two feet wide and six inches deep, the earth to be thrown up in a ridge on the south side of the trench, there to remain during the season. We have now a trench of the required length, six inches deep, which is to remain open for the year, and in this trench the vines are to be planted precisely as directed above ; that is to say, they are to be planted four inches deep in the open trench. The most direct mode of proceeding is to throw out *ten* inches of soil, and then plant the vines, covering them *four* inches, which will leave the trench open a depth of *six* inches, the surplus soil to be ridged up on the south side of the trench. If the sides of the trench are made a little sloping, the wash, even during heavy rains, will be trifling, and do no harm. The reason of this open trench will become apparent in the subsequent treatment of the vines. Stakes should always be put in at the time of planting, when we can see where to put them ; if put in afterwards, the roots are disturbed, and often very much injured. In Bright's system, in the *Thomery*, and, indeed, in all systems where close planting is the rule, it is better to open a trench than to dig holes.

It will be seen, that though the manipulation differs somewhat in each case, the general object is the same in all. We aim to prepare a suitable bed for the reception of the roots, to spread them out naturally, to fill up all interstices, and to have the roots at a suitable depth. In filling up the holes, the soil, as it is put in, should be lightly "firmed," compacted, or pressed gently with the foot, so as to prevent

too much sinking; but care must be taken not to pack it hard. We do not design at present to do any thing more than describe the simple operation of planting the vine. It will be necessary, however, at the time of planting, to cut all the vines down to two or three eyes; this is indispensable, no matter what system of training may be adopted. Planting should not be done when the ground is wet; when it will crumble freely in the hand it is in good condition. As a general thing, no watering is necessary at the time of planting; if the ground is very dry, and water is needed, let it be given before the last two inches of soil are put in. All unnecessary exposure of the roots must be avoided. A good plan is to have a couple of wet cloths at hand; place the vines on one, and cover them with the other; they can thus be carried along, a dozen or so at a time, without exposure. They can also be put in a box and covered with damp moss, or any other convenient plan can be adopted.

There are many systems of training the vine, some of which require the vines to be planted at certain distances apart. This part of the subject, as well as the best time to plant, will be treated in our next article.

LANDSCAPE ADORNMENT, NO. 12.—ROADS.

BY GEO. E. WOODWARD, LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

*"Prim gravel walks, through which we winding go,
In endless serpentine, that nothing show,
Till tired, I ask, 'Why this eternal round?'
And the pert gard'ner says, 'Tis pleasure-ground."*

MUCH has been written to show the folly of adopting the curve line in the drives and walks of a country estate; but, in spite of all the arguments utilitarians have brought against it, popular taste still advocates its continued use. As a line of grace and beauty, the curved line has no equal; as a line of direction, properly managed, it is scarcely of less importance than the straight line; and in point of taste, management, and economy, it stands confessedly its superior. The average of experiments can draw no practical distinction, in distance, between the undulating grades of the straight avenue, and the winding direction of the curved line, when applied to grounds in the natural form; and the theory that introduces distance into the argument against the curved road, has a basis of the most trivial and unimportant character. We take the position, that *economy* is one of the most important elements to be considered in adorning a country home, and that, when applied to the location of a drive or walk, it is productive of the most beauty. The competition of trade or travel does not constitute a single purpose of its construction; but ease, utility, and ornament, are among its chief characteristics. The conditions that govern the location of a public highway, or systems of internal communication, do not apply in the same manner; although both require a knowledge of the same rules, and the application of the same principles.

In selecting the ground for an approach road, it is desirable to avoid a succession of different grades; and a location should be so made, as to keep the grade as nearly uniform as possible; this is by no means practicable in all cases, yet it should be one of the leading points to be observed. In doing this, good

taste would dictate the selection of such ground as would be fully up to the grade line, instead of making embankments across hollows or depressions ; and to wind around, or rise over, instead of cutting through elevations. No general rule, however, will apply to a particular case. It is sometimes far better, tastefully considered, to embank a low hollow, than to sag into it, with a steep grade ; also to make a short cut, than to go over an abrupt elevation. Where the particular circumstances of the case are best treated by a judicious balancing of excavation and embankment, they should be so managed, that no violence to natural surfaces should be apparent ; thus, an embankment should gradually blend with the original ground, and the sides of an excavation be sloped off and planted in such a manner as will conceal all appearance of force. A certain degree of earth-work, in road-making, is always necessary ; but as it seldom happens that a grade line coincides exactly with the original surface of the ground, it can generally be found, if a location be properly made, within the minimum amount of excavation or embankment, and in such case, the adjoining lawn should either be taken down or raised up, so that it correspond with the grade of the road.

A remarkable feature, in a first-class ornamental road, is a well-adjusted gradient, and marks one of the strongest differences between it and the common public road ; the use of it not only expresses a high form of utility, but necessarily a high form of beauty, and it is quite as essential as the graceful plan of alignment, or a finished manner of execution.

A road that winds around a hill side, will have more than the usual amount of earth-work ; in this case, it is laid over, that is, the excavation on the upper side makes the embankment on the lower, and the surface lines are easily carried over the face of the cutting, and down the slope of the embankment. Mr. Loudon says, "one of the finest descriptions of approach road that we can imagine is, where a road of several miles in extent is made to wind its way through hilly or mountainous scenery at *one uniform rate of ascent*, till at last it arrives at an open level area, containing the mansion."

If we compare the differences in distance between a straight road and a curved one, supposing both to be located on a plane surface, we shall find that the average increase of distance is about five per cent., very often not exceeding three per cent., and on very long approaches, as low as, or even less than one per cent. On an approach road four hundred feet long, the extra distance would be twenty feet, or the length of carriage and horses ; an approach one mile long, would lose about two hundred feet, and.* "If a road between two places, ten miles apart, were made to curve, so that the eye could nowhere see farther than a quarter of a mile of it at once, its length would exceed that of a perfectly straight road between the same points, by only about four hundred and fifty feet." As a man will walk three hundred and fifty feet in a minute, and an ordinary horse will trot a thousand feet in the same space of time, one can easily estimate to what extent it will pay to sacrifice beauty and taste to utility.

We have, in some cases, lost at least thirty per cent. of distance, in carrying a road on to a high elevation ; this was for the purpose of getting length to reduce the rate of ascent, a straight line being utterly impracticable.

That time should enter closely into the calculations of business men, is to be expected ; that it should be an element to be considered, in the plan of embellishing a country estate, and to it should be sacrificed taste, pleasure, or safety, is not in accordance with any of the principles of the art. When time is of such

* Sganzin, p. 89.

importance, we should prefer to live nearer town, or the dépôt, and not yield a single expression of beauty to the inexorable demands of business.

It would seem hardly necessary to advance further arguments in favor of the use of the curved line, though they might be multiplied almost indefinitely. Over natural grounds, or those embellished in the natural style, it is the only harmonious line, and expresses delicacy, ease, and polish; while the straight avenue breaks harshly over undulating swells, and has an abrupt and forcible expression. With level or inclined planes, the straight line is in keeping, but with rolling or undulating grounds, the curved line only will harmonize.

The location and construction of ornamental roads is a subject of much importance in landscape embellishment. Understandingly managed, they will elevate the character of a very poor place, or, by a contrary course, will effectually ruin a fine one. More than one-half of the expression of the design lies in the proper location of the approaches and drives; by them, and from them, the impression is received. They are the most frequented portions of the premises, constitute one of its principal charms, and if of a high order of excellence and finish, are one of its pleasurable associations. Next to a fine lawn and skilfully managed plantations, the hard, smooth, well-kept drives, command their share of praise. But this is a subject we can not dispose of in one essay.

[Mr. Woodward has reached a portion of his subject which has been fruitful of argument: it is still debatable ground. It is easy to see which side of the question he takes. Both the curve and the straight line have their proper places: it is the part of good judgment and taste to locate them properly. Mr. Woodward proposes in subsequent articles, to illustrate the construction and form of some of the best kinds of roads.—Ed.]

ENGLISH VIEWS ON PEAR CULTURE.

BY WM. BRIGHT, PHILADELPHIA.

Last year, when I was about to visit England, an amateur friend, who makes Pear-culture a specialty, handed me a list of questions, which he wished me to present to some experienced cultivator of this fruit in Great Britain, and, if possible, to obtain some brief answers to the inquiries. On my arrival in England, I gave the paper to Mr. JOHN POWELL, head gardener in the Royal Gardens at Frogmore, who has perhaps no superior in the art of managing the Pear in that country—at least, in respect to *practical* skill. Mr. Powell very kindly consented to answer the questions. No words passed between us in relation to the inquiries, nor was any discussion held by us upon the general subject of Pear-culture. I give the questions and answers just as they were written by my amateur friend and Mr. Powell.

What is the best standard market Pear in England?

Answer. Bishop's Thumb is the most profitable. Summer Bon Chretin, Béurré de Capiaumont, and Hassel are good.

What is the best market Pear on Quince root?

Ans. Louise Bonne de Jersey. The Ananas also grows and bears freely on the Quince.

What is the best age for transplanting Pear-trees, all things considered, for a commercial Pear-orchard?

Ans. Pear-trees may be transplanted with success at any age from one year to ten ; but the best age, all things considered, is three years from the graft or bud.

Do you place any manure or compost under or around or among the roots of Pear-trees when setting them in the orchard, and if so, what kind ?

Ans. If the soil is poor, such as red sand or shingle, and also shallow, rotten horse or cow dung is sometimes used with good results ; but it is better to top-dress the roots with the same kind of manure after planting ; also, in after years, to top-dress in the same way when the trees show any signs of feebleness.

Do you apply any mineral manures, as lime, ashes, bone-dust, to the soil before planting ?

Ans. In heavy clay or wet soils it is an excellent plan to use bone-dust, lime, pulverized brick, and ashes. Perhaps the best material of all is burnt (or charred) earth ; in fine, any material which will render the soil open and porous. Calcareous or carbonaceous substances are always useful in such soils.

How small may be the distance between Pear trees, in garden culture ; and what is the best distance for a dwarf and standard orchard mixed ?

Ans. Dwarf and pyramid may be grown at eight feet apart, without root pruning. Mr. Rivers cultivates them a yard apart, by continuous root pruning, or by lifting them every two years, and pinching the leading shoots during the summer growth. It is not advisable to plant dwarfs and standards together. Eighteen to twenty feet apart is the usual distance for standards.

What is the best method of pruning to induce early fruiting, and continued healthfulness and profit ?

Ans. Root pruning, and stopping all the strongest shoots during their growth, is the best treatment for dwarf trees. To induce early fruiting in standards, the shoots must not be shortened.

Does the Borer ever, or often, enter standard Pear wood ?

Ans. This grub and beetle are not found in England.

Is there any earth-grub (not the true Borer, *Saperda bivittata*) which attacks the quince roots ?

Ans. None that I am aware of.

Do you advise the application of much stable-manure to fruit-bearing Pear trees ?

Ans. As stated elsewhere, all depends on the nature of the soil, and the condition of the trees. Stable-manure is good, used as surface dressing, and the skilful cultivator will always know, by the condition of his trees, when to use any stimulants.

Do you advise the application of lime, ashes, dissolved bone-dust, iron filings, or any other special manures to Pear trees ? If so, what ?

Ans. In clay, bog, or peat soils, the application of lime, ashes, or bone-dust, I strongly advise. In calcareous soils, stable-manure, or any other kind similar in chemical properties, should be used.

Do you mulch Pear trees ? If so, with what substances ?

Ans. We always mulch after planting, and at all times when the trees show any signs of weakness. Cow-dung is the best for this purpose.

Do you practice root pruning of standard Pear trees ? If so, how soon do you commence after transplanting to the orchard, and in what way ? Do you, at the same time, cut back the tops freely ?

Ans. We never root prune large standard Pear trees in orchards, where they grow at will. Pear trees, allowed to assume their natural size and habit, always form abundance of fruit buds. The only pruning required is thinning the

branches, and occasionally shortening a branch to balance the tree; but, as a general rule, the tops ought not to be cut back, for there the finest fruit is produced. Garden standards are often root pruned, that is, when pruning is annually done to keep the trees within bounds. Root pruning is then of great service to check their growth and to cause them to be fruitful. It is not necessary to shorten the branches at the time of root pruning.

Would it answer to cut off all the roots of Pear trees four feet from the stem on two sides of the trees, and keep them constantly cut in that direction, if allowed to extend on the two other sides? (That is, to grow them in rows ten feet apart, and keep open a sub-soil cut in the centre of the ten-foot space, to drain and admit air into the soil.)

Ans. Yes, especially in wet or heavy land; doubtless the trees would be improved by this treatment.

How do you keep and ripen pears generally?

Ans. In the first place, the proper time for gathering each variety must be considered, and this varies in different places. Therefore no special rule can be given which will be a guide to all cultivators. The peculiarities of each variety and each locality must be studied. As a general rule, however, all kinds that have a tendency to *mealiness* should be gathered early, and the reverse with those varieties which have a juicy and gritty texture. Early varieties are of course best kept in a cool place; after the late varieties are gathered, admit air and light to the store till the fruit has ceased to throw off moisture, and the cells are sealed by the oily matter furnished by the fruit for that purpose. When this process is complete, if the store be dry no more air is requisite. Be careful not to allow any decayed fruit to remain in the store, or any fungi to accumulate. If any fruit do not soften at the proper time, introduce them into a warmer temperature, which will improve both color and flavor. It is a very good plan to place a few of the long-keeping kinds in *dried sand*, in boxes or jars. Do not put them in till the sweating process is past. A few lumps of unslacked lime placed in the store-room occasionally, is of great service to absorb moisture and destroy fungus.

How do you keep, ripen, and color the Vicar of Winkfield and other winter pears?

Ans. Allow all late pears to hang on the trees till the latest period of gathering. Give light and air to the fruit store for the first six weeks; after this close the house, and keep the temperature at 45° to 50°. If not colored or ripe at the proper season, put them into a close box, in a warm room or viney, where the temperature is from 60° to 70°.

What, in your opinion, are the causes of the Blight which often seizes and destroys large and apparently healthy fruiting Pear trees?

Ans. The Blight which seizes Pear trees in the summer time in America, is unknown here. Large and apparently healthy trees often fail here, but in no solitary instance have I traced the cause at the root, but to frozen sap in the branches. The injury is not done during severe frost in the winter months, but in spring when the sap is rising, and then I believe no injury arises from *dry frost*, but when the branches are wet, and the shoots become coated with ice, which happens when rain and frost occur nearly at the same time, or frost immediately succeeds rain.

Is trenching three feet deep absolutely necessary, on a *good soil*, after sub-soil plowing eighteen inches deep, to obtain the best success in pear culture? Is it even desirable?

Ans. Trenching soil three feet deep is not at all necessary, especially if the soil is good. Eighteen inches are sufficiently deep. If deeper, it would only encourage over-luxuriance of growth in the trees, a thing which ought always to be avoided, if possible, in pear culture. If the surface is clay, over a calcareous sub-soil, then deep trenching may be done with advantage, and these two kinds of soil incorporated together make a soil suitable for the growth of the pear.

Is under-draining necessary in a friable soil, with a porous sub-soil, for success with quince-rooted trees, or standard pears?

Ans. No, only in very wet, swampy ground, and then it is good practice to grow them on ridges.

Do you advise deep or shallow planting of Pear trees?

Ans. Shallow, by all means. Young trees should not have more than four inches of soil over their roots, and in planting divide the roots equally around the tree, and place them in a horizontal position.

How deep, if at all, would you cover the quince roots on dwarf trees?

Ans. About four inches, and that, if possible, raised a little above the surface.

Would you permit grass to grow in a Pear orchard? If not, how would you work the open ground to save labor and not injure the trees or exhaust the soil?

Ans. I would not advise grass for a Pear orchard. It is far preferable for the health and productiveness of the trees to work the soil and grow light crops, say early potatoes in the spring, and turnips in the autumn, always using a dressing of manure for the spring crop, so that the soil may not be exhausted. It also appears certain that late spring frosts do not injure the blossoms of fruit trees so readily when growing in arable land, as in grass-covered soil, owing probably to a dryer atmosphere in the case of cultivated ground.

[An article of much interest, especially as presenting the views of a skilful English cultivator. The questions are clearly put, and, in the main, clearly answered. With the exception of Louise Bonne de Jersey, none of our popular pears are found in Mr. Powell's list; from which might be drawn some interesting inferences. The difference in climate, however, is so great, that we should naturally look for widely different results.—ED.]

ON THE SYSTEM OF POT-CULTURE IN ORCHARD HOUSES.

BY AN OLD-COUNTRY MAN.

(Continued from p. 216.)

ALTHOUGH the cultivation of fruits in pots under glass has been to a limited extent practiced for very many years in the forcing houses of large establishments, (and for which the mode of potting that has been above described is applicable,) the system of growth now usually referred to, under the designation of "Orchard Houses," is comparatively of recent date; it having been brought before the horticultural world in England about a dozen years ago by Mr. Thos. Rivers, a well-known nurseryman at Sawbridgeworth. The principal feature of the excellent system advocated by him consists in the growth of trees through

the year by the joint agency of the earth in the pots containing the trees, and that of a border of rich earth upon which the pots are placed, and into which their roots penetrate through holes left for the purpose in the bottom of the pot. And as these roots (in the border) are periodically cut off in the course of the annual culture, it will be apparent that the condition of the plant is not so dependent upon the earth in the pot: because, in addition to the nourishment supplied by that, a great degree of stimulus can be given to the plant by increasing the richness of the border; and the excitement to growth, if too active, can again be checked by severing the roots below the pot, wholly or in part, as may be required.

The way to pot the young tree for this mode of growth is, first to enlarge the hole at the bottom of the pot to the size of three or four inches. Place three or four large pieces of broken pot over this hole, so that there is room for the roots to protrude through in several places. Now place a few pieces of fibrous loam or turf on these broken crocks, and the tree upon that. Then proceed to fill up the pot, compressing the compost with care, but firmly and evenly, as before directed. On account of the rooting into the border, and the increased support there to be derived, smaller pots may be used; but it is not expedient to use a less size than eleven inches in diameter, in which size, if desirable, some kinds of fruit may be grown for three or four years, or even longer.

The border within the house upon which the pots stand should be composed of rich material, such as rough turfy loam mixed with manure from an old hot-bed, forked up and left in a loose, open state, so that air may circulate freely through; and the pots when placed on it will press the surface under them sufficiently to enable the roots to obtain a firm hold beneath.

The best time to pot the plants is in October or November, but it may be done in February. In the fall, the sooner it is done after the leaves turn yellow the better; and they should be immediately pruned. If young trees a year old, cut them down about the sixth bud from the surface of the pot; if a year older, cut each branch (of which there should be left three or five, according to the strength of the plant) to about seven or eight inches in length. Give a good watering, to wet completely *through* the ball of earth as soon as potted; and water occasionally *if necessary*, but not otherwise, just to prevent the earth becoming dust dry, until frost sets in. From that time no more water will be required until February. The pots may all be put close together in the house, having a good covering of hay or straw over the whole to keep severe frost from them. Take care mice do not get at the bark.

In February, towards the end of the month, examine the plants, and place them in the border, (if there be one) at least three feet apart, and so that their foliage will not shade one the other. Give each a small quantity of water; and in a week's time give more, so as to bring the earth into a moist state gradually; as to which, the temperature, whether warm or otherwise, must be the guide.

Ventilation, both at front and back or top of the house, will now be necessary all day, and at night also, whenever sharp frost or a cold frosty wind does not prevail, in which case guard against it.

As soon as the buds on the trees commence to break into leaf, give them (annually) a good top-dressing of very old stable manure; and also a thorough watering with manure water once in every six or eight days; and except on dull cloudy days, or when frost is severe out of doors, they will require daily a good soaking with soft water, which must never be given of a lower temperature than the atmosphere of the house. The afternoon is the best time to water in hot weather, and the morning in cooler weather.

As soon as fruit has set and is commencing to swell, but not before, syringe the house freely morning and evening, and this should be continued until the period arrives for the fruit to arrive near to maturity. As soon as it begins to change color leave off syringing; but the daily supply of water must be continued until the fruit is gathered, and until the leaves commence to turn yellow. From that time withhold water gradually, and let the plants go to rest.

When the leaves begin to change, such of the pots as are rooted into the border should have a knife passed under them, and the roots cut off close to the bottom of the pot.

During the growing season the supply of water must be regulated by the state of the weather. It must be borne in mind that where the roots are allowed to ramble in the border, the plants are not so liable to suffer from neglect of watering as are those confined entirely to the pots. And although it is not, on the whole, advisable to plunge the pots, yet it is a good plan to rest a piece of board or something against the side of the pots, standing next the front of the house, to prevent the sun's rays from striking directly against them.

The great thing to be attended to is to give plenty of air. Without ample ventilation it is quite useless to attempt this mode of cultivating fruits. From the time that growth commences in the spring until the fruit is ripe, there should be constant circulation of air through the house; in fact, all that can be given consistently with keeping out frosty or very cold winds; which latter, although not frosty, are injurious.

As regards pruning, the leading shoot of each main branch should be cut back in October, according to its strength: probably from one-half to two-thirds the growth of the year. Besides this, at the end of May or in June, the side shoots that grow upon the main branches must be pinched off, reducing them to an inch in length; two leaves left on each are sufficient. These so left will become future fruit spurs. Where the plants have rooted into the border, their branches should receive their fall pruning at the turn of their leaves, at the same time that their roots are severed, as above directed.

After three or four years' growth in pots, the main branches will diminish considerably in length; and then they require but little shortening in the fall; but the summer pinching of all lateral shoots will be annually required. And when that is done it is also best to pinch the extreme points off the main branches also; but on no account to shorten those until the fall.

When about the size of marbles, the fruit must be thinned, taking care never to overcrop the plants, or their future bearing will be injured. The number left must be regulated by the size of the tree; from one dozen to three or four.

If, when in vigorous growth, any plant that has thrown down roots into the border is found to be growing too luxuriantly, and making elongated, watery wood, it may easily be checked by cutting the roots below the pot *partly* through, by passing a knife between the bottom of the pot and the surface of the soil on one side only. Where the roots are altogether within the pot, overgrowth is not likely to occur; on the contrary, after growing in the same pot for two years, such plants should be shifted into larger pots or wooden tubs, which latter are the best, because they protect the roots better than earthen pots from changes of temperature. When shifted, the surface soil may be taken away with a pointed stick for an inch or two, and the sides slightly pricked with the stick to loose some of the roots; and dead roots, if any at the bottom, should be cut away. In placing in the larger pot, secure good drainage, as in the first instance, and take care to press the compost *very* firmly between the old ball and the sides of the new

pot. Unless this is well done, the water afterwards given will pass off through the new compost, and the old ball of roots will gradually die and cause the death of the tree.

Those plants which are allowed to root into the borders will not require repotting so often as others. No grape vine or other foliage must be trained over the roof of the house. If a vine is required, it must be confined to an end of the house. No fruit trees would do any good beneath its shade.

[This last caution is a very necessary one. We have seen several attempts to grow fruit trees under vines, but they were signal failures, the fruit, when it ripened at all, being quite insipid and worthless. The best that can be done under such circumstances is to start the trees in a *cold* vinery, and move them out of doors as soon as the vines begin to make the least shade. The only way in which both can be cultivated in the same house is to grow the trees and vines in pots, and this can be done in a satisfactory manner.—ED.]

CHARCOAL A DEODORIZER OF ANIMAL MATTER, AND NOT A PRESERVATIVE OR ANTISEPTIC.

BY WILLIAM LAWTON, OF NEW ROCHELLE, N. Y.

I AM induced to make some remarks upon this subject, in consequence of a discussion which took place at a meeting of the Polytechnic Club of the American Institute, in reference to a quality attributed to this material, and until lately generally admitted, as a *preservative* of animal matter from putrefaction and decay. To fall into this error was very natural, when a piece of decaying or tainted beef, covered for a few hours with pulverized charcoal, could be taken out and found to be inodorous, and free from impure ingredients, as far as taste and smell were concerned. The inference seemed almost conclusive that charcoal would not only arrest putrefaction, but restore the animal fiber to all its peculiar and healthful properties as food. Here it can be seen how readily the plain, practical man of business, as well as eminently scientific men, can honestly endorse and sustain opinions which are plausibly upheld by appearances and ingenious experiments, which, on more thorough investigation, may be found to be erroneous.

In a communication of Professor Way, before the Royal Agricultural Society of England, he sets forth that the noxious gases resulting from the putrefaction of animal matter generally, (consisting principally of sulphured hydrogen and sulphuret of ammonia,) each particular animal substance, excretion, or otherwise, had its peculiar odor. Although abundantly perceptible by the senses, and in many cases, as in musk, almost inexhaustible, yet it was inappreciable in weight.

The causes of the action of charcoal, and the difference in the effect of wood or animal charcoal, need not be considered now in explanation of the single question, Is charcoal a preservative of animal substances against decay and putrefaction? Bearing directly upon this question, we have a paper from Dr. J. Stenhouse, of England, furnished to the Journal of the Society of Arts, with an interesting account of experiments made with a view of testing this peculiar property attributed to charcoal. The bodies of two dogs were placed in a wooden box, on a layer of charcoal powder a few inches in depth, and covered with the same material, and

the box left open in the laboratory of an eminent chemical manufacturer. No effluvia was ever perceptible; and on examination, at the end of six months, scarcely any thing remained except the bones. Experiments were subsequently made with a full-grown cat, and with two rats; the bodies soon became in a highly putrid state, without the slightest perceptible odor in the room.

These experiments can be readily made, and seem to establish the fact that, so far from arresting animal decomposition, it promotes putrefaction, by rapidly absorbing the gases which arise from it. Pulverized charcoal, then, favors putrefaction and decay, and stores away in its cells the pestilential gases which may destroy the living, when returning to earth that which, according to the laws of nature, belongs there.

Let us hereafter ascertain more fully the uses to which this cheap and perfect deodorizer can be applied. During the unhealthy seasons, can we bring down and store away for manure poisonous miasma, and purify the air? By the proper use of this material may we not seize upon that pestilence which "walketh in darkness," and, under the providence of God, strip it of half its terrors, and save many from death?

Let us experiment with this cheap material. Let us see that our stables and pens are well supplied, and all decompositions in the vicinity of our dwellings rendered inodorous; and then let us inquire if the manure we have gathered from our barn yards, and hog pens, and poultry houses, is not intrinsically worth as much as all the cost of the material, together with the labor of applying it. Indeed, that we may thus deodorize and store away in the most convenient manner, all animal and vegetable putrescences that we can collect upon our farms, to be conveniently and cheaply distributed upon our gardens and farms.

Powdered charcoal can be purchased at a very low rate; and as it possesses, more than any other substance, the power of attracting, condensing, and retaining ammonia within its cells, would it not be well to experiment upon the economy of a more general use of this material, and its more extensive use in the compost heap?

The season is approaching when a consideration of this subject may elicit facts of value to farmers and gardeners, to whom it is often as important to call attention to established facts, as new theories, and ingenious and costly experiments.

[This subject is interesting and important enough to be thoroughly discussed. The valuable properties of charcoal as a deodorizer have long been known and used, and are not brought in question by Mr. Lawton and the Polytechnic Club. It seems to us, however, that they have assumed the whole question. There is nothing to be gained in discussing a question unless it is based upon some known basis, clearly stated. After reading Mr. Lawton's article, we can not perceive wherein the opinions of "plain, practical men of business," or "eminently scientific men," are proved to be erroneous. These men have made no such claims as are here ascribed to them. What scientific man has ever claimed that a covering of charcoal dust would preserve from decay the body of a dead dog? Let the claims of scientific and practical men be fairly stated before we proceed with an argument. They have made certain claims in behalf of charcoal dust, but we must deny that they are of the nature here ascribed to them. Let us get our premises fairly established, Mr. Lawton, and then the argument will follow with some hope of beneficial results. What you say of charcoal as a deodorizer is good and valuable.—ED.]

APPLES—ARE THEY RUNNING OUT?

BY J. J. LYON, PLYMOUTH, MICH.

DEAR SIR,—Observing, in your February number, an article by C. W. G., on the above subject, I wish to bespeak your indulgence while I notice a few particulars in which he apparently misapprehends the real nature of the difficulties of which he treats.

Speaking of the Kentucky fruit known as Rawle's Jannet, he draws the conclusion that its habit of late starting in the spring occasions, also, a lateness of maturity which unfits it for more northern latitudes. There is doubtless much apparent reason for this conclusion in the fact of its unpopularity north of the Ohio valley; but, with a knowledge that it has been grown for many years, in this state, as far north as latitude as $42^{\circ} 30'$, with no complaints of its failure to mature, the writer is inclined to attribute its lack of popularity at the north, rather to the fact that it does not compare, in quality or appearance, with other varieties that succeed there, while *they* are unsuccessful in regions farther south.

The main fact, however, to which this correspondent alludes is, that, in nearly all the northern States, the varieties that usually take the premiums, as the best fall and winter sorts, are the same, notwithstanding the fact that these same varieties are pronounced unsuccessful in many of these states. From these facts, he argues that their apparent failure must be *only* apparent; and that, with proper treatment, they would be found universally successful. This we can not but consider a hasty conclusion. The varieties to which this writer doubtless alludes, such as Rhode Island Greening, Fall Pippin, Esopus Spitzenburg, Roxburg Russet, and Baldwin, do occasionally produce fruit in these regions, and that of the finest quality. Their failure in portions of the west, therefore, is not in *quality*, but in *quantity*; and in this respect, the deficiency is often so decided, and withal so constant, as to render them mere cumberers of the ground.

In many localities, however, and with some of these varieties, this is by no means the only cause of failure. Whole orchards are sometimes swept off by the changeableness and severity of the winter, rendered more fatal, doubtless, by the unripened wood resulting from over-rich soils, lacking the suitable preparation to which he so properly alludes.

While, therefore, we heartily concur with your correspondent, and also with yourself, in the belief that these varieties are not to be considered as "running out," the conclusion seems difficult to avoid, that they lack adaptation to the climate or soil, or both; and that other, and perhaps less valuable varieties, must be substituted for them, till the progress of pomology shall develop newer and more valuable sorts, adapted to meet the exigency.

[The above, dated February 25th, would seem to prove that "Uncle Sam" sometimes drives a very slow coach. We are very glad to get it, however, and ought not, perhaps, to complain of the mail in these times. While we are not willing to admit that apples are "running out," we can agree with you, Mr. Lyon, that some kinds are better adapted to certain localities than others. We must accept the fact for the present, however we may account for it. Leaving C. W. G. to speak for himself, we would remark, that articles conceived in the spirit of the above, going a little more into detail in regard to kinds, locality, etc., would be of much service to the Committee now revising the fruit list of the American Pomological Society.]

IS ASPARAGUS A MARINE PLANT?

BY HORTICOLA.

THIS question was, several years ago, discussed in the *New England Farmer*, a paper which does equal credit to its accomplished editor as to those who support it by their subscriptions. A writer stated there that he had extensively travelled on the sea-shore from Holland to Denmark in order to collect the marine plants for a friend of his, then engaged in the preparation of a botanical work; but he had not met with a single specimen of asparagus. He had, however, seen asparagus growing in great abundance in a certain locality of the *Hainleite*, a calcareous ridge in Thuringia, stretching parallel with the *Harz* and *Thüringerwald*, from west to east. It grew there in the woods, not far from the city of *Frankenhauzen*, in such profusion that children and poor people used to cut it for the market. The asparagus was thin, it was true, not thicker than the stem of a white clay pipe, yet of a flavor surpassing that of the cultivated kinds.

As the writer of the article had never received a satisfactory answer when he asked, whether it was true that asparagus is a marine plant, being generally referred to the books which said so, he wished to see the question discussed.

I saw then a number of articles not only in the *New England Farmer*, but also in other agricultural papers, to show by authority that asparagus was a marine plant. Some of them were based on rather surprising grounds. That the *Encyclopædia Americana* was adduced to corroborate the fact may be overlooked, although its distinguished editor, Dr. Francis Lieber, my highly esteemed friend, would never have dreamed of seeing his work used to decide a botanical question like that. The *Encyclopædia Americana* was never intended for such a purpose. Its statement that asparagus is found growing on the English coast and on some of the British islands, is undoubtedly correct, but it would never claim those localities exclusively as the native birth-places of a plant so widely disseminated all the world over. This will become apparent from the following.

A gentleman of Connecticut invited the writer to pay him a visit; he would show him asparagus at the mouth of the Connecticut River, and on the shore of *Long Island*. This is singular; for the gentleman seemed to think that asparagus is an *American plant*, an assertion so bold and ludicrous that one is prompted to say with Horace of old,

"Risum teneatis, amici!"

A boy conversant with the alphabet of botany will not believe a place where a plant accidentally grows wild, its native birth-place. In walking through the fields near New York, a tolerably careful observer will hardly see any other weed than of European origin. Would he without hesitation pronounce them American because found to grow without cultivation on American soil?

The discussion interested me much, and would have done the more so, had it been conducted at least with common sense. I could not follow it then further than to the Connecticut and Long Island stage, as I, by accident, moved to a distant place, where my attention was directed from agricultural pursuits. Yet in recently perusing some numbers of the *New England Farmer*, I fell in with several of the articles alluded to, and propose to contribute a little to the settlement of the question still open for doubt.

It is, however, necessary to premise a few remarks having immediate bearing on the subject.

It does not follow that a place where a certain plant grows wild, is just the only place where it can be found. Do not our trees grow in a variety of places and soils? Are not a number of our wild plants found nearly every where, on the mountains, in valleys, in barren sand, in peat bogs, in the deepest shade as well as in the full sun? Botanists designate such plants by saying that they grow in all places (*omnibus locis*). I have found asparagus growing wild in a peat-bog very near New Durham, N. J.; I have found it on the *Catskill Mountains*; I have found it in the *Highlands* of New York, remote from all habitations of man, back of *Fishkill*; I have found it on the trap-rock near *West Hoboken*; I have found it in graywacke soil by the roadside; I have found it on the beach in *New Rochelle*, West Chester Co., N. Y. There I found it towards the close of October in full bloom. I have the plant still carefully pressed and preserved, together with a beautiful blossom of the red Azalea, (*Azalea nudiflora*), which I had picked a few days before in the Catskills.

I ask, would any one venture to ascribe asparagus to peat-bogs, or to the Catskills, or the Highlands, or to Graywacke, or to Trap-rock? Would any one be willing to assert that asparagus blossoms in October along with the *Azalea nudiflora*?

It is true enough that asparagus is benefited, at least *not injured*, by the application of salt, although I have been in countries where they raise asparagus in the greatest perfection without a particle of salt. Does it follow that asparagus must be a marine plant, because of its bearing salt as an addition to its soil? I should not wish to show that I think so little of the judgment of any of the readers of the *HORTICULTURIST*, if I attempted to point out the large number of trees, shrubs, and herbaceous plants that are benefited by salting without being *marine plants*. In salting can certainly not be found a reason that asparagus belongs to the marine plants.

To the authority of the *Encyclopedie Americana* that of works on Natural History could easily be opposed. Without searching, *Lenz*, for example, occurs to me, who asserts, in the fourth volume of his justly celebrated book, (p. 247,) that asparagus grows wild in *Germany*, in sandy places. Still, this would be of no avail, as the correctness of such an assertion might be questioned by pointing out other localities with different soils, and yet producing wild asparagus in profusion.

The task of going back from age to age, from book to book, to find the first notice of asparagus, would be too tedious to be likely accomplished by any one, however great an interest he might take in investigating thoroughly matters in themselves so trifling.

That asparagus grows in Thuringea, on the calcareous ridge mentioned above, there can be no doubt; that it grows there originally, not accidentally, may be more than probable, on account of the extensive area it there occupies.

Not long ago I happened to open *Juvenal*, an old friend of mine. In his eleventh Satire he has, in v. 68 and 69, the following words:

* * * et montani
Asparagi, posito quos legis villica fuso.

This means, literally translated, "and mountain asparagus, which the wife of the farmer collects, after the spinning is over." Juvenal speaks there of a meal, on

which shall appear a *kid*, with more milk in it than blood, and which never touched the coarse food, of which the goats are fond, and *mountain asparagus*. In Italy, therefore, in the times of *Juvenal*, (at the close of the first and beginning of the second century after Christ,) *asparagus was a mountain, not a marine plant*.

Perhaps it had been transplanted from Britannia into Italy. Should it seem probable to any body that such was the case, it might not be difficult to prove that the grape vine had originally come from Massachusetts and Rhode Island, called *vine-land* by the Northmen, and had been disseminated in France. This, however, must, in regard to asparagus, have taken place in times out of mind, before the Romans knew any thing of Britannia; for, according to *Martial*, the great Roman epigrammatist, a contemporary of *Juvenal*, asparagus was, in his times, *already artificially cultivated, as well as growing wild*. He says, in Book xiii., Epigr. 21:

Mollis in æquorea quæ crevit spina Ravenna
Non erit in cultus gratiior asparagis.

This means that the asparagus cultivated in Ravenna was not more tender and agreeable than that growing wild.

[*Horticola*, in his learned dissertation, has certainly produced some strong arguments against the popular belief that asparagus is a marine plant. We have seen it growing wild under the most diverse circumstances. It seems to us quite certain that asparagus is not alone indigenous to the seashore of Great Britain, as is commonly supposed. It is distributed over all portions of the world, being most usually, however, found growing in light and sandy soils. In the sandy steppes of Russia it is said to grow so abundantly that cattle are pastured on it. We confess to archaeological proclivities, even in Horticulture, and should be glad to have this subject further discussed.—ED.]

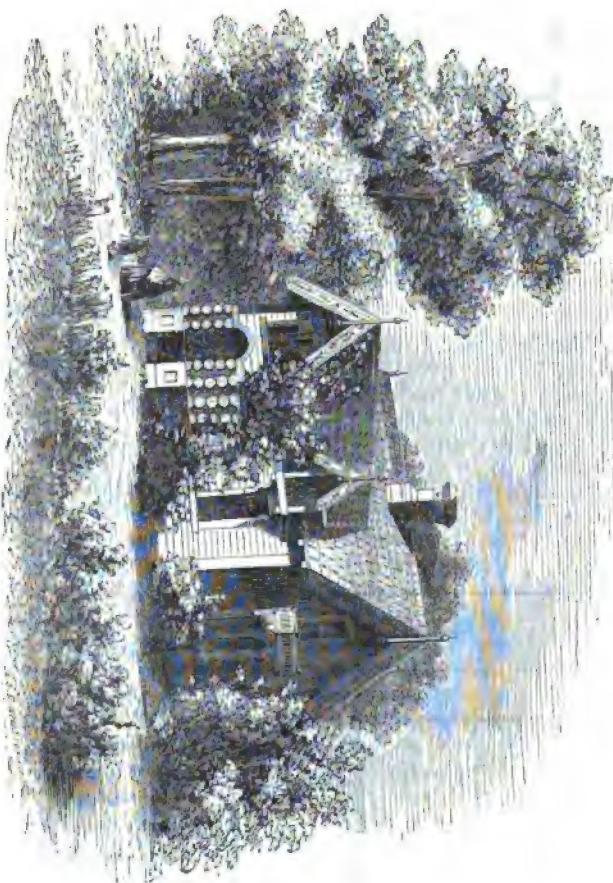
DESIGN FOR A SMALL COTTAGE.

BY MYRON B. BENTON, AMENIA, N. Y.

This design is calculated to give convenient accommodations for a small family, without great expense. Two of the most costly features, usually, of a house, are avoided—the bay-window and veranda. The place of the latter is supplied by a grape trellis, of which the first cost would be but trifling, and instead of requiring constant expense to keep it in repair, would prove rather a source of profit. The walk beneath it should be either paved or thoroughly gravelled.

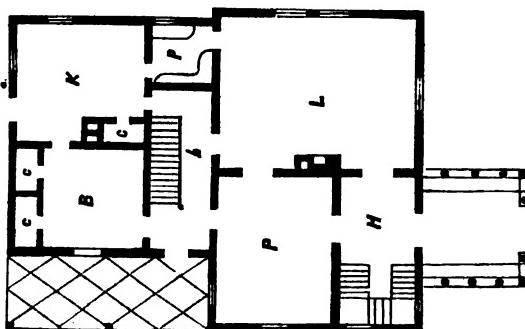
The principal entrance is through an open porch, which is supported by half-length turned posts, the lower part being ceiled. A small circular window lights the stairway in the front hall, *H*, and occupies the narrow panel at one side of the porch; and there is a lighted closet under the stairs.

Contrary to the almost universal custom, the largest and pleasantest room in this design is not set apart to be kept darkened most of the time, and only used a few times in the course of the year. In how many houses which we see, the principal and most costly part of the structure seems only erected for a barricade between the street and the little back wing, the only part commonly used.

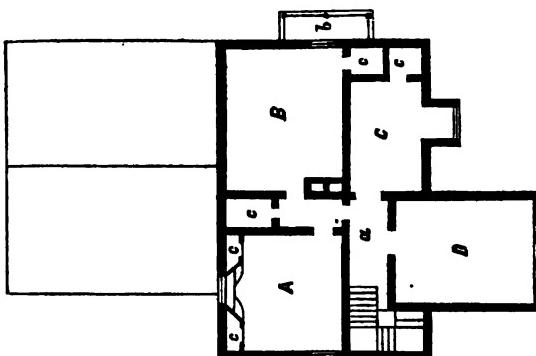


COTTAGE DESIGNED BY MYRON B. BENTON.

The parlor, *P*, is, however, a pleasant room, 12×15 feet, with two windows, (one of which opens under the trellis,) and communicates with both halls. The living-room is a larger room, 15×20 feet, and is designed, also, for the dining-room, and connects with the kitchen, *K*, by the back hall; the pantry, *p*, opening



from both. The back hall, *h*, furnishes a side entrance, without an outside door, opening directly into the living-room, or the necessity of traversing the kitchen for that purpose; a fault too common in small houses. Though no chambers over the back wing are given in the plan, yet a stairway is placed in this passage, as being conveniently situated, in case subsequent enlargements should be required, by raising that part another story. The bed-room, *B*, is 11×11 feet, and might be warmed by the pipe from the kitchen stove, passing through the partition.



The chamber plan gives four bed-rooms, without any in the back wing, which would furnish two or three more, if made of equal height with the front part: *A*, 9×11 feet, with two closets and a recessed window-seat; *B*, 12×15 feet, opening on the balcony, *b*; *C*, 8×12 feet, lighted by the projecting dormer; and *D*, 10×13 feet.

The cost of construction would, perhaps, be about \$1200.

THE POLYANTHUS.

BY DANIEL BARKER, HARTFORD, CONN.

It must be admitted that the Polyanthus, if not one of the most popular at present, is at least one of the most beautiful of our Spring flowering plants. There are but few that can boast of a greater share of floral beauty than is displayed by a well-grown specimen of any of the improved and cultivated varieties which are cultivated with so much success throughout Europe, (and, we are pleased to add, in many places in this country;) and as new and good varieties are imported or raised, and brought into notice, they can not fail of gaining many admirers, and ere long will become quite as popular as they are in Europe.

To cultivate it successfully throughout the northern and eastern states, it should be treated as a half-hardy plant. They are not difficult to manage, if kept through the winter in a cold frame, protecting them from severe frosts, keeping them dry when in a dormant state, and watering freely when in a growing state, and keeping them at all seasons quite free from decaying leaves, weeds, &c.

Raising from Seed.—For raising common kinds, to withstand the winter in the flower garden, it is easy enough to procure seed; but to raise a first-class flower, such as should be considered sufficiently choice to repay by its extra beauty the extra care usually bestowed upon the improved varieties, is quite another thing. During our thirty years' experience, we have never seen *one first-rate variety raised from ordinary seed*. We would not be understood to say that seed purchased at seed stores is not worth all that is paid for it; in many cases, when the seed is fresh, it is; but if any one purchase with an idea of procuring such seed as will produce first-class varieties, he will most assuredly be doomed to disappointment. What, then, is to be done? The only way is to procure a few good standard kinds, and keep them apart from all the Primula family, as far as circumstances will admit. If others are growing near by, place the best kinds under a muslin shade during the blooming season, being careful that no winged insects find their way through the frame to the flowers, or all your care may end in disappointment.

As to the most proper time for sowing the seed, I would advise September as the most suitable. The soil should be light and sandy, with a small portion of very rotten cow-dung, not less than from two to four years old. The seed pans should be well washed and dried before using. After having placed a sufficient quantity of drainage, (from one to three inches,) fill in to within one inch of the top with the compost, pressing it down rather closely. Upon this sow the seed evenly, but not thickly. Sift over it soil, through a fine sieve, to the depth of about the sixteenth part of an inch. After a gentle watering through a fine rose, remove the pans to a cool frame, placing a flat piece of glass over them. Keep the soil in that happy medium between wet and dry, when, if the soil be good, it will germinate in about six weeks. It is an old but excellent plan of the Dutch and French florists, in watering seeds and young plants of their favorite flowers, to use a hard clothes brush, dipping it into milk-warm water, and drawing the hand briskly up and down; by this means there is a beautiful vapor, which waters without washing up the seed or young plants.

As soon as the plants make their appearance, be careful to admit air by degrees, in order to render them hardy. When they have made about four leaves, remove them into seed pans or boxes, planting them about one inch apart, in the same kind of soil as recommended for the seed. Place them in a cool, dry place in a frame,

where they may remain until the leaves touch each other, when they must be repotted singly into pots about three inches in diameter, in a soil composed of about equal parts of loam, peat, and very rotten leaf mold, with about one eighth of rotten cow-dung, (from three to four years old,) and sharp river sand. Place them again in the cold frame, where they may remain, well protected from severe frosts, until the following March, when they will require repotting into pots five inches in diameter, using one inch of drainage in the bottom of the pots, with the same compost as recommended for the first potting. As soon as they flower, which, under ordinary circumstances, will be about April, let all of them possessing good properties be selected, and named or numbered, and afterwards receive the same attention as directed for full-grown plants. Be careful not to turn out any of the plants which have not flowered, as it not unfrequently happens that the weaker plants prove to be the most beautiful varieties.

Offsets.—The proper season for removing the offsets is from August to the end of September. They should be taken from the plant either by being broken by the hand or by a piece of wood; never use a knife in dividing them, as it is very prejudicial to both parent and offset. Plant them singly, in small pots, in a compost the same as is directed for seedlings. Water carefully and with caution until the plants are well established, shading during the warmest part of the day. When well established, they should be treated as directed for general stock.

Soil for established Stock.—To insure good healthy plants, never use any of the nauseous ingredients recommended by many of the European florists. A mixture which will not fail to make good healthy plants and fine bloom, may be made as follows: four parts of good fresh loam, such as the sod, with about six inches of the soil, from an old cow pasture—if of a sandy nature, so much the better; two parts of good rotten cow and horse manure, not less than three years old; and two of decayed leaf mold; well incorporated before using.

Culture.—The most proper season for repotting is from the last of August to the end of September; not later. In dividing the plants, one good strong crown will be quite sufficient. Always pull them asunder; never use a knife. For the larger and well-rooted plants, prepare pots about four inches in diameter, by washing them, unless new ones are to be used; place one inch of broken oyster or clam shells at the bottom, over which place half an inch of moss, to make it more permeable. During the summer months, place the plants upon a bed of coal ashes, plunging them to the rims of the pots, under a wall or fence having a northern aspect, the better to shade them from the mid-day sun. About the middle of October, they should be placed in a good tight frame with a boarded bottom, which will keep them dry, and prevent the ingress of worms to the pots. Elevate the plants to within eight or ten inches of the glass. Let air be given at all favorable opportunities, particularly during damp weather. In watering, always use a spouted pot, to prevent the water settling in the heart of the plants, which would damage if not destroy them. Be careful to keep them well aired whenever the external atmosphere will admit of it; and protect them from severe frosts by a mat or shutter. About the first week in March, the plants should be top-dressed to the roots with the same kind of compost as used for potting, and well pressed down. Water must now be given, in proportion as the plants advance in growth. At this time, be careful to guard against frost, and to remove all decayed leaves, weeds, &c. As soon as the flowers begin to open, they may be removed into the greenhouse, conservatory, or any other place where they can receive light and air, and be sheltered from the direct rays of the sun. Never use manure water for this class of plants, as it only tends to produce a luxuriance of foliage injurious to the

development of the flowers, and causing, in many instances, the premature decay of the plant.

The following is a list which, in my experience, are among the best in cultivation, and which will not fail to give entire satisfaction to the cultivator of this useful and elegant tribe of plants.

Alexander, (Pearson;) Beauty of England, (Maude;) Cheshire Beauty, (Sanders;) Duke of Northumberland, (Thompson;) Exile, (Cronshaw;) George IV., (Buck;) Highland Mary, (Craigie;) King, (Nicholson;) Kingfisher, (Addis;) Princess Royal, (Collier;) Royal Sovereign, (Gibbons;) Royal George, (Blake.)

[The Polyanthus, in its improved forms, is yearly becoming better known in this country, and in time will become as popular as it deserves to be. In some sections they are quite hardy, but the bloom is always better for a little protection. With the above article, Mr. Baker sent us a box of flowers, all of them beautiful; one of them, named the Golden Circle, was especially so. We heartily commend the Polyanthus to all our readers.—ED.]

CULTURE OF THE DAHLIA.

BY ANDREW RICHARDSON, FORDHAM, N. Y.

(Continued from page 116.)

BEFORE proceeding further I may as well dispose of all the duplicate plants, or those not required for planting out. As they root I repot them into two sizes larger, giving them good rich stuff; placing them in any spare bit of ground, or place them in any airy corner out of the way, supplying them well with water, and allowing them to grow and bloom as they please till cut down by frost, when they are removed, *in their pots*, perfectly dried, and then stored away for the winter in the cellar, or any dry place, where neither frost nor heat can reach them. These “*pot-roots*,” as they are called, are an excellent security against the loss of “*ground-roots*,” which, with the best of care, will sometimes damp off, more especially those that have been highly fed. Now for the beds.

Let the Dahlias as they are planted out be well watered, *and never throughout their entire growth be allowed to wilt or flag from want of it*. To prevent accidents by wind, tie them rather loosely to the stakes with bast matting. Cultivate a deadly enmity to all weeds, never allowing them to progress farther than their seed-leaf. The Dutch hoe is the best tool for their destruction, merely skimming the surface of the ground without endangering the roots of the plants.

Air being equally necessary as water to the roots, never allow the ground to remain in a compact, baked state, which is certain to occur after waterings or heavy rains. As soon as it is sufficiently dry, break or open the surface, *without turning the soil*, with a pronged tool. I use a three-pronged fork—the prongs about 4 inches long, with a handle 5½ feet, somewhat like a small trident. It is exceedingly useful for all such purposes, and particularly for working among closely-planted flowers, where a larger tool could not be introduced with safety. It is my almost constant companion in the garden, *using it always before watering, and when there is a prospect of rain*. In the latter case I even open up the pathways in order to catch all I can: one good shower being worth a dozen waterings, and every stirring of the surface of the soil equal to a dose of manure.

Whenever it is necessary to water, *do it effectually—beware of sprinklings;*

and as the plants increase in size, extend the circumference of the waterings. By the time they have reached maturity, the feeders are searching in all directions for their pabulum from one to three feet from their respective bulbs; so it is not immediately upon the bulb water must be expended, but, say 12 or 18 inches from it, over every other portion of the bed.

When the flower-buds begin to appear, then is the time to commence *feeding*, for which purpose I procure a few barrow-loads of *fresh cow-dung*, of which I put two or three spadefuls into a large tub, filled with water, stirring it well, till it acquires the color of good "*brown stout*." Having allowed it to settle, I give each plant a couple of gallons twice a week to begin with, increasing it to three times a week as they advance, and as the time for competition approaches I apply it daily; on the intervening days giving them pure water only. As this may be an unpleasant operation for some noses, I would recommend instead to those who dislike it, the application of guano water, *very weak—better often and weak than too strong*. Should the weather be wet, and no occasion to water, yet advantageous to feed, pass some dry guano through a fine sieve, and sprinkle it thinly on the beds to be washed in by the rain. *Salt* is also good for them at this stage, applied in the same manner as the dry guano, but be careful of the foliage that it does not touch it. This, I think, is all that need be said on watering and keeping the ground in *open order*. Let us now turn our attention to other important branches of the subject, viz.: training, thinning, or pruning and disbudding.

If the Dahlia, generally speaking, were in no way restricted, but allowed the full bent of its inclination, it would, when at maturity, present a confused, intricate mass of main stems, laterals, and foliage; and, if it flowered at all, instead of giving blooms of four to six inches in diameter, they would be no larger than small pompon chrysanthemums. It is to avoid a result so undesirable and disappointing that pruning and training are begun at the earliest possible period.

When the laterals or side-shoots have grown a couple of inches, or even less, select four of the strongest nearest the ground, one on each side of the stem, which with the centre will give five main leaders, thus :: enough for strong growing varieties; for weaker sorts *three* are sufficient; *all the rest pinch off*, carefully preserving the leaves, from whose axil the shoot starts. In cases where the laterals don't break, cut off the top of the plant, when they will soon appear, supplying the now vacant centre with a fifth shoot from the bottom. Were it not for the appearance of the thing, I would grow them all without centre leaders, for the *free, airy opening* it gives them, keeping them dwarf and short-jointed, tending much to improve the blooms; but being a *stickler for form in plants* as well as in flowers, they strike me, without the centre, as being like so many tubs; therefore I advocate centres, using the means within my power to give them the most perfect circulation of air, *pruning* and keeping the *side stems well apart*.

When the laterals have grown a few inches, place the side sticks in their positions, one opposite each shoot, and distant from the plant six or eight inches, driving them firmly into the ground, at least a foot and a half, giving them an *outward* inclination, thus |||. As the shoots advance tie them out to their respective sticks, and as *their laterals* appear pinch them all off, reserving the axil leaves. We have now five main leaders without a single lateral, and all we have to do for some time is *so to carry them forward, pinching out and tying up*, as the plants progress, making a point, at every fresh tie, of looking back at the former ones, and *slackening* them, if need be, to prevent any check to the flow of sap. With favorable weather they ought now to be growing rapidly, and will require frequent looking over.

Let me here drop a caution or two. In pruning, as much as possible *banish the knife*; never allow superfluous shoots to get beyond the power of the *finger and thumb*, it being better management to stop them while young and tender, when their removal can produce no mischief, than to delay till they become older and firmer, when the necessary use of the knife must cause a large loss of sap, to the positive injury of the plant, causing needless exhaustion by allowing a superabundant growth that has ultimately to be removed.

Accidents, it is said, will happen in the best regulated families. It would be a remarkable season that passed without the destruction of one or more main stems, generally caused by high winds and careless tying, when the *knife must come into play*.

In such cases cut the stem cleanly off near the bottom, if the portion left be solid; nothing more need be done; but if hollow, examine if it contains water, and if so, take it out with a small bit of sponge tied to a piece of stick; then cover the orifice with any thing that will exclude water. I use a piece of *India rubber cloth*, or a *wooden pill-box*, for as sure as water finds a lodgment there, just so sure will the remaining stems rot off, rendering all previous labor vain; shoots will by and by start from the bulb, but too late to be of any service.

Keep a sharp look-out now for premature flower-buds, and pick them off. As a general thing, I never let a bud get larger than a pea until the first week in September; *all are taken off*. Were I to allow them to bloom when they pleased, they would be utterly exhausted before their blooming season proper, September and October, arrived, leaving me, when I wanted them, without a bloom worth looking at; therefore my object is to carry them, in all their undiminished vigor, through burning July and August, *without a bloom upon them*, into the more congenial temperature of September and October, when I encourage them to put their best buds foremost.

Let us return to the thinning process, which, if carried out as directed, the plants, about the beginning of August, each with its five leading stems without a lateral, ought to present a fine healthy appearance. The pruning, up to this period, may by some be considered *severe*, but I find it absolutely necessary to secure for the future of the plant the most perfect circulation of air.

Having, then, gained this *all-important point*, *I cease pinching out for the present*, and allow the next four laterals on the centre stem to grow, one on each side, *vis-a-vis*, as at the beginning, pinching out the succeeding ones as before. On the side stems I allow three to grow, the *outward* and the *two side ones*, taking away the *one pointing inward*, always keeping an eye on free ventilation; and as the laterals of these 16 additional shoots appear, take them off *until their flower-buds show themselves*. In a short time these young shoots will fill the spaces between the main stems, affording abundance of material to work upon, and forming a dome which, when covered with blooms, as it soon will be, is a sight never to be forgotten.

Hitherto our operations have been general, that is, all have had the like treatment; in future it must be varied to suit the nature or habit, and the manner of blooming of the individual plant, for they not only vary in these respects, but, like other *beauties* in the world, some are positively capricious, being all that one can desire in one locality or soil, and good for nothing in another. They certainly open a large field for observation, and here the subject becomes very suggestive, but it is not necessary that I enlarge further than to give the *leading characteristics*, in order to guide us in our future management.

Varieties, having a crowded mass of foliage, are those that require *severe*

pruning; if their flowers are numerous and small, a liberal disbudding must take place; if constant and true to character, disbud as soon as you can get your fingers about them. Duchess of Wellington and Conqueror are types of this class, requiring the severest treatment in both respects.

There are many varieties, exquisite in every point, but so uncertain, such as Beauty of Bath, Duke of Wellington, Agincourt, Beauty of Slough, Yellow Beauty, and others, that may, perhaps, give a single good bloom or two at most during the whole season. With such sorts we must be very cautious in disbudding, having patience until we ascertain by the formation of the bud whether or not it is worth retaining; but I need not waste space on these, which I merely notice to show the treatment, and which I invariably discard, however beautiful, when, after various modes of treatment, I find that they *will have their own way*—ground-room and labor being with amateurs too valuable to bestow on any of them that don't yield a fair proportion of good blooms during a large part, if not the whole of the season. Another class presents buds with hard, scaly eyes, of which Lady Paxton, Mrs. Eliza Burgess, (new,) and Tyrian Prince, are types, whose centres in the early part of the season are slow in perfecting themselves; so much so, that often before being fully developed the back petals drop, rendering such blooms valueless for exhibition or competition purposes; the only remedy in such cases is more moderate pruning, and rapid growth, with high feeding. As the season advances, and these varieties somewhat exhaust themselves, they will be found to open freely without losing their back petals; they are a valuable class where late blooms are desired.

The next and last class is of a character diametrically opposite, having centres soft and loose. I call them the *deceptive class*, for to all appearance there is nothing wrong with the bud selected; and it is after daily watching its development with delight, and inwardly rejoicing in the hope of to-morrow completing a marvel of perfection, that all our high anticipations are often dashed to the ground by the unlooked-for fatal spot—the *yellow disk*. Types of this class are found in Empress, Amazon, Miss Caroline, and others. They have often deceived me, but I continue to grow them because of their always yielding a fair quota of perfect blooms under proper treatment. If there is one portion of the Dahlia ground *poorer* than another, I plant them *there*, growing them *very slowly*, and *less vigorously*, or, in other words, *half starving them*.

Keeping these few remarks in view, the blooming season will have advanced but a short way before the young amateur will have observed the various characters described, and with a few additional hints on buds and disbudding, he will be enabled to manage the balance of the process to his satisfaction.

We will now suppose it the beginning of September, when our attention must be given to the buds. As they progress, look over them very often, and every one in the least degree imperfect in form and centre, remove. Buds, to be depended upon, may be known by their perfectly circular form, and in their centre a perfectly circular hole about the size of an ordinary pin-head; this, in general, is their character before showing color, and any departure from it, however slight, will warrant instant decapitation; any neglect in this particular must be avoided to prevent the least unnecessary waste of strength.

Others again present the hard, scaly centre, which for the most part are constant and to be depended on.

Additional pruning, more or less, now depends on the views of the cultivator, whether a rich garden display only is desired, when *less* pruning is required; or, if his object be exhibition or competition, then the severe system must be con-

tinued according to the necessity of the case as already described. Apply the same to disbudding. In the latter case, when the object is to exhibit or compete, a little calculation becomes necessary in order to have them in perfection on the day they are wanted. From the time the bud begins to show color, until fully developed, is about eight or ten days, more or less, according to the weather, which, seeing we can not control, it is well to guard against disappointment by selecting three buds in different stages, which gives us three strings to our bow; should the first be too advanced, we have others to fall back upon. Buds are generally in clusters of three, the centre one being the earliest and largest, and when perfect always to be preferred. I now apply my invariable rule, which is, *first to be sure of my bud, then to take off every thing near it*, giving a liberal supply of water—*brown stout and pure*—alternately, morning and evening.

While growing for exhibition, it is also requisite to amputate every bloom that may have been allowed to develop, *so soon as it has passed its best, and before it begins to perfect its seed*, otherwise failure will certainly ensue; for as seed is allowed to mature, blooms deteriorate in a corresponding degree.

Expositions in this country are carried so far into autumn as to preclude the possibility of properly maturing seed, and at the same time compete successfully. It would be well, therefore, where seed is desired, to grow two plants of a kind, allowing those for seed to bloom a month earlier—from the first of August—giving them the same treatment as the others, until the beginning of September, *when cut off every thing but the few blooms already developed, and the few buds bursting into bloom*; never mind how much the plant may be disfigured; away with every thing else—abundance of seed may then be relied on. Take it for granted that where this *slashing* mode is not adopted, seed-pods may be numerous, but rather empty. As the petals decay, remove them, to secure the seed from injury in case of much rain.⁹ Gather the pods as they ripen, with a few inches of stem to each by which to hang them in bunches of *a few only* together, that they may dry the more thoroughly, in a warm, airy room, when the seed may be rubbed out. Much of it may be thin and apparently worth nothing, but look upon it as more valuable on that account, *as it really is*; more good sorts coming from such than from seed of a plumper character.

All that remains now to be done is to get them safely out of the ground and disposed of for the winter. After the foliage has been blackened by frost, choose the *first* sunny day to lift them; cut off the side-stems close to the centre one, of which leave about four or five inches, tying the name to it with a bit of copper wire; remove all the *side sticks only*, leaving the centre one to come out along with the root, because so closely are the tubers laying around it, that the action necessary to force it out would disrupt or otherwise seriously injure the root. The lifting is better performed by two men, opposite each other, and acting simultaneously. The broad-pronged tool is preferable to the spade for use, inasmuch as the tubers run less risk of being cut. Allow whatever of soil may adhere to the root to remain, there being *no better preservative*. When lifted, turn upside down, to run off any water that may be in the stem. They may now be placed in an outhouse where they can have abundance of light and air, and allowed to dry sufficiently before being placed in their winter quarters along with the pot-roots. During winter, let them have change of air as often as weather will permit, looking them over occasionally and removing any portion of decayed bulb.

[The reader has now the views and practice of the most successful Dahlia grower within the circle of our acquaintance. If the directions are followed faithfully, the most gratifying success will be certain.—ED.]

THE CURCULIO.

BY A CINCINNATIAN.

EDITOR OF HORTICULTURIST,—I am surprised to discover in yours, and other Horticultural papers, that they can not prevent the destruction of their plums by the Curculio. I should not be surprised, if I knew no better remedy than those they state. Some shake the trees. I believe this would be a safe remedy, if they would begin at daylight, and shake the trees till night, not even leaving the trees to eat their meals. The "various washes and fumigations of horrible odors," would be a certain preventive, if continued till the fruit is ripe. But I should not wish to live in the house, or make the family a minute's visit, who owned the place. Their "offensive manures under the trees," that do not meet the approval of the Curculio, would not meet mine, much as I admire the fruit. To my surprise, nothing is said of surrounding the trees with a brick pavement. My garden contains near six acres. In it, in different places, I had, twenty-five years since, many plum trees; five years in six, all destroyed by the Curculio. All attempts to destroy the Curculio failing, I moved sixteen trees, and planted them round the house, surrounded by a brick pavement. A small circular space round each tree, to let rain in, and occasionally throw some water in; over this, I threw some article to notify the Curculio that if their children fell there, they would not be permitted to make an entrance. In twenty-five years I have not had a plum stung. A full crop yearly. When I began this remedy, I covered a small cluster of plums in the garden, with a fine, compact gauze: all the others were stung. When the plums began to ripen, I removed the gauze to discover if the Curculio was still about. On examining them about a week after I found every one stung.

After I published this, I saw statements in the papers, from persons east, that they had a plum-tree, half the branches over a stream of water, the other half over the ground. The branches over the water always bore a full crop; those over the ground, always stung by the Curculio. Providence, in many things, gives to insects and other races a full knowledge of many things, of which we know nothing.

In Kentucky, some farmers preserve their plums by consulting common sense. They raise a large stock of poultry; their poultry yard is large and surrounded by a fence. In this inclosure they plant plum-trees. The Curculio never troubles them, as the yard is always filled with different kinds of poultry, and do not wish the poultry to destroy them. All parents have this feeling.

[The above, from an old and well-known horticulturist, was crowded out last month. His suggestions are worthy of attention. In regard to planting trees over water, we have no faith in it whatever. We have often examined such, and found them as badly infested as others. We think it is about fifty years since the experiment was first tried, and failed. The experience of every close observer of insect life must have taught him, that in this case at least a little too much has been claimed for instinct. There is no more devout admirer of the wonders of insect life than we are; but we do not care, in the practical things of life, to have our admiration run too far into the domain of the imagination. Every man can settle this point for himself, whether he has a plum tree or not; if he can not spare the time, let him appeal to any intelligent friend who is in the habit of whipping a trout stream. The same instinct which would teach an insect not to

deposit its eggs on a tree overhanging water, ought to teach it not to deposit them on trees in our public parks, where thousands are daily walking ; or in a paved yard, or where there are poultry or hogs ; but instinct does not do this. Paved yards, poultry, hogs, etc., have their value, not in preventing the Curculio, in the first instance, from stinging the plum, but in destroying the stung fruit, and so from year to year lessening the evil. Concerted action in this way would rid a large district of them in a great measure ; for their flight is very short. There is probably no better method than that pursued for many years by Ellwanger and Barry, as recommended by Dr. Trimble last month. We have faith in the remedy of Mr. Cumings of the *Observer*, and we have faith, also, in the Gishurst Compound, when used as directed, and as *preventives*. *There is no cure for the sting of the Curculio* ; and when that is distinctly understood, one step in the right direction will have been taken for lessening the evil. The Curculio has been our companion during the winter ; some of them are now as fat and plump as beach birds. Those kept in a warm room feed daily ; those kept in a cold room, on being exposed to the warm sun, immediately become active. These were all hatched from larvæ taken from the plum. Our friend, C. Marié, Esq., began, at our request, a similar series of observations at the same time, making almost daily notes. We shall continue these observations through another season, then compare notes, and furnish another chapter to Curculio literature.—Ed.]

VENTILATION—IS IT NECESSARY FOR THE HEALTHY GROWTH OF PLANTS?

BY BROOKLYN.

DEAR SIR,—I wish to ask you the above question ; pray do not dismiss it and me, as too stupid to be answered. I am but a novice, and “merely ask for information.” It is, I believe, usually insisted upon by gardeners, as *very necessary* ; and I concede that for plants grown in the ordinary manner, and for ordinary purposes, the common practice is correct. What, then, am I after ? Pumping into and out of a barrel is effected in the same way ; I want to know which way we pump. Do we open to let in air, or to let out heat ? If a pipe ran through the top part of a house, and when cooling (misd called ventilating ?) was necessary, cold air or water were forced through it, or cold water were run over the roof, would not that answer as well as sliding down the sashes ? If the temperature never rose above the desired point, would ventilation be necessary ?

In most houses, plants are grown with a view to setting out in the open ground ; is not the much insisted upon ventilation, simply a “hardening off,” acclimating process, not necessary if the plants were intended to remain in the house ? There is a wide range in the temperature desirable for plants ; the minimum of some, is the maximum of others ; it also varies for the same plants, according to the state they are in ; the ordinary gardener has to try and strike a happy medium. If but one kind were in a house, were intended to remain there, and the proper amount of heat and moisture were never exceeded, would ventilation be necessary ?

Airing cabbage and lettuce frames is strongly insisted upon in all gardening books I have read, and unless it is done, they spindle ; does this arise from the

plants needing air, or from the fact that they will not stand a high temperature, and that in consequence of thick sowing and board frames, they are deprived of proper side light?

Perhaps you will think that as I acknowledge the common treatment to be right, the reason therefore is of little consequence—the difference “twixt tweedledum and tweedledee;” but I think things are best called by their right names, and therefore do not see why what, in my humble opinion, is a false reason should pass current. If ventilation is necessary, our furnaces are improperly fixed; it is as easy to give plants fresh air in winter as in summer, if you will pay for it—in fuel. The heating surface should be cased and air warmed as it enters, as in dwelling-house heaters of proper construction; and I think this to be the best way to warm conservatories, or piazza greenhouses; the atmosphere would be more agreeable and healthy for the owners and their friends, if not for the plants.

[Our practical friend is always most welcome. We are ever ready to assist him, and all our readers, to the best of our ability. Things, undoubtedly, ought to be called by their proper names. Whatever the gardener's theory may be, practically he opens his house to reduce the temperature, though in the act he of course lets in fresh air; but the reduction of the temperature is the ruling idea, however, and not the admission of fresh air, in the great majority of cases. The two ideas will naturally be associated by an intelligent mind. We may say, therefore, that ventilation is not resorted to until the temperature has risen above a certain point. In regard to your next question, we may say, “ventilation” is a “hardening off” process for plants intended to be transferred to the open air; a gradual approach to the atmosphere in which they are finally to grow. Next, if but one kind of plants were in a house, and the proper amount of heat were not exceeded, “ventilation” would not be necessary. This is but a corollary of what has been said before. Again, cabbages, etc., “spindle” not only because they are sown thick, but because a high temperature causes them to grow too rapidly; the liability to “spindle,” however, decreases very much in proportion to the amount of room each plant has to grow in. But in regard to this whole matter, we may say briefly, that a *circulation* of air, in connection with a suitable amount of *moisture*, is more important than a *change* of air. This circulation, where the needed moisture is present, is often afforded by the simple changes of atmospheric heat; though this, again, is dependent to a considerable degree upon the construction of the house. A dry, hot air is prejudicial to most plants; and the admission of cold air in such cases often only substitutes one evil for another. That “ventilation” is often carried to an excess, we have no doubt; and this will continue until the subject is better understood and the whole system changed. We simply say for the present, give your plants plenty of room, plenty of moisture, and “ventilate” as little as possible. With every caution, the excess is likely to be on the wrong side.—Ed.]

WHAT IS A FOX GRAPE?

BY W. A. WOODWARD, OF MORTONVILLE, ORANGE COUNTY, N. Y.

THE terms Fox, Foxy, Foxiness, as applied to the aroma of all native grapes, is a misnomer, and, therefore, should be discontinued. It has been given to nearly every species of native grape. Le Conte, in his classifications, has

1. The common fox grape, (*Vitis labrusca*.)
2. The summer grape, (*Vitis aestivalis*.) It is commonly called the "Fox grape."
3. The cobweb-leaved vine (*Vitis araneosa*.) It is known as the "fox grape."
4. The winter grape, (*Vitis vulpina*.) The grapes have a strong smell, resembling that of a Fox; hence the name *vulpina*, (*anglicé*, Fox.)

Here are four distinct species of American grapes designated as Fox, certainly not for their peculiar aroma; for some of these varieties are destitute of it. Will any one presume to call the celebrated Delaware grape (a variety of the *Vitis aestivalis*) a Fox grape? I trow not. From whence, then, did the phrase originate? The fable of the Fox and the grapes is attributed to Æsop, who flourished in the days of Croesus and Solon, more than 2400 years ago: its application was to the *Vitis vinifera*, and it would hence appear that they had *sour grapes* even in those days. No other species of grape was known in Europe or Asia prior to the discovery of America. We may suppose the first adventurer from beyond sea to this continent, on landing, discovered grapes growing into the tops and extremities of our gigantic forest trees, and, probably, meeting the same difficulty in getting at the fruit that the fox in the fable did, methinks I hear him say, Ah! these are the "fox grapes" we read about. Now the first discoverer has an undoubted right to name the fruit; but he, doubtless, supposed that America, like Asia, produced but one species; subsequent examinations show that there are many; some writers enumerate them by dozens. These have been reduced down by careful classifications to four or five, east of the Mississippi, and these present very distinct and marked differences; yet all are named, as if the only characteristics of an American grape was "a strong smell, resembling that of a Fox." Here is the error. How would it appear, if we were to name the celebrated Muscat grapes, with their peculiar musky flavor, resembling in that respect some of the varieties of the *Vitis labrusca* so closely as scarcely to be distinguished from them—the *muskrat* grape? and hence endeavor to "make believe" that it had an offensive animal smell. If the name Fox was originally given to one, it certainly does not belong to the three or four other Native species. Let us, then, apply it to the one known as *Vitis vulpina* of Linnæus, (Fox,) and let the other species be known by their botanical names, *V. labrusca*, *V. aestivalis*, *V. cordifolia*, &c. If the names of animals are still desirable, let us call them polecat, woodchuck, muskrat, &c., and let it be understood, that we shall endeavor to discover the *animal smell* when we eat the fruit, and thus be able to distinguish one from the other. The *V. labrusca* has a musky flavor, which, instead of being offensive, is agreeable; it is sought after for the aromatic bouquet of its wines. An eminent western vintner writes me, "I should like the Catawba better if it had more of the Fox flavor and aroma than it has for wine;" though he certainly does not mean the "strong smell of the fox," for he could easily obtain the animal at Cincinnati, and impart its peculiar flavor to his wine, by a single plunge into the fermenting vat. Here we see clearly the misnomer; it is not the *fox flavor*, but the musky aroma of the erroneously so called fox

grape that he prefers. So long as we attempt to cast contempt upon any species of grapes, so long shall we neglect to discover their good qualities, and introduce improved varieties into cultivation. The varieties are very numerous. Many of those growing wild are late in ripening, and are valueless; they are overtaken by frost, and fall from the stem while austere, acrid, and immature. We can expect nothing from them, except in warmer climates; but there are varieties which ripen early, and from these may be selected such as will certainly, in future generations, if not in the present, excel the Isabella; larger, sweeter, more juicy, thinner skin, softer pulp, finer flavor, the bunch and berry of good size, adhering firmly, a good bearer, free from mildew and rot, ripen early, and the vine a good healthy, hardy grower. This may seem chimerical; but I am confident that such a desirable table grape can and will be produced from the *Vitis labrusca*, or from some of its generations; at any rate, one possessing many of these qualifications. The improved varieties of this grape already in cultivation are Isabella, Catawba, Union Village, Concord, Diana, Perkins, Hartford Prolific, and many others of less note.

From the *Vitis æstivalis* are descended some of our most valuable varieties of the smaller or wine grapes; lacking the aroma of the *V. labrusca*, but, nevertheless, bearing "bags of wine," containing the proper proportions of sweet, acid, astringency, albumen, mucilage, and vegetable extract, for producing good wine. This species, with, perhaps, one exception, will, probably, never excel for the table, as the bunches and berries are too small to become attractive or desirable. Among the cultivated varieties of this grape are the Delaware, Clinton, (deserving more attention than it has received,) Warren, Pauline, Le Noir, Elsinburgh, and others.

The *Vitis cordifolia* (Fox grape) is hardly worthy of cultivation for any purpose. I know of no varieties of it that are considered desirable for gardens or vineyards. If the *Vitis vulpina* is really the grape that has the offensive smell, it is the only one that can be called the Fox grape; then "give the devil his due," and forever acquit the *Vitis labrusca* and *Vitis æstivalis* from the charge.

I appeal to the good sense of the pomological world (that world having very much increased of late years, both in circumference and knowledge, has now become very extensive; of course, there must be a large amount of good sense to appeal to) to call things by their right names.

[We agree with you, Dr. Mosher, and others, in condemning the absurd use of the terms in question. There ought to be an end of it at once and forever. You have done a good thing in calling attention to it so pointedly.—Ed.]

VIRGALIEU VERSUS VERGOULEUSE.

BY JOHN B. EATON.

I WAS some months since considerably puzzled, Mr. Editor, by a report in your journal, of a discussion said to have taken place at a meeting of the Fruit Growers' Society of Western New York, in which the "Vergouleuse" pear came in for a large share of notice.

I was somewhat surprised to learn that this variety had been discussed by the Society in the manner reported, and not less so, that it was grown extensively, or even at all, by the members taking part in the debate.

I quickly discovered, that the pear known of old in this state and elsewhere as the Virgalieu, was the subject under discussion, and very naturally concluded that your compositor, or proof-reader, was responsible for having permitted an error to not only "creep in," but *all through* the article. I afterwards, however, observed the same transposition of names in subsequent notices of the fruit, and found, to my no small surprise, that you, Mr. Editor, had made the change by way of correction, and, as I understand it, upon the ground of a preference, on your part, for the former orthography. I have so far been silent upon the subject, in the expectation that some abler and more influential voice than mine would be raised against the innovation, but in default of that, I am not inclined to allow the matter to pass without recording my individual protest.

Without assuming to be an authority in such matters, or intending to be captious or hypercritical, allow me to suggest, that such a change of appellation greatly tends to increase the confusion in which the nomenclature of many of the older fruits has been so vexatiously involved, and to impede, to a serious degree, the labors of the numerous associations and individuals who have been for years assiduously striving to reduce this confusion to an intelligible system.

In this troublesome labor, they have been in a great degree successful, and I conceive it to be the duty of all who are connected with an authoritative pomological body, to co-operate with its efforts, sustain its decisions, and discourage the use of what have been decided to be other than standard names. In no other manner can we arrive at a uniform system of nomenclature, which is so greatly to be desired, but so very difficult of attainment under any circumstances, and it should especially be considered the province of all horticultural periodicals, to uphold the authority of such associations, and avoid giving sanction to any errors which may conflict with and impede their efforts for the advancement of pomological science and accuracy.

The name "Virgalieu" is so firmly rooted in many localities, that it will scarcely, perhaps, become obsolete in our time, and will occasionally, of course, be brought to notice; yet, at this day, when "White Doyenné" is so generally recognized by pomological authorities as the standard name of the pear in question, it seems to me eminently proper that all synonymous names should be abandoned for this one, if not in familiar conversation, at least in all recorded mention of the fruit, especially reports of discussions and proceedings.

It is not to be denied that the names "Virgalieu" and "Virgouleuse" have been confounded, and I have an indistinct recollection of having heard them, in an instance or two, both applied to the same fruit; but if "Virgouleuse," or "Ver-gouleuse," was ever recognized by any competent authority as the proper name of the variety in question, it has escaped mention in any pomological work with which I am conversant, and I imagine that it would be an affair of some difficulty to establish it as such at the present day. Admitting, however, for the moment, that it were possible, or even desirable to do so, what is to become of the ancient pear to which this name has so long been applied? Shall we re-name it, or adopt one of its few and scarcely known synonyms?

It will surely not for a moment be contended, that the two fruits are identical? The White Doyenné, or Virgalieu, an early autumn fruit, and the Virgouleuse, a winter variety, differing in form, color, texture, quality, and habit of tree, can scarcely be confounded under one name. The former is known to every one who grows pears; the latter, if planted at all now-a-days, is grown by very few, and I imagine only by those who attach more importance to the extent of their collection, than the intrinsic merit of the varieties comprising it.

To the many, then, who know the Virgouleuse only by name, or, perchance, by description, the transposition of names would render a report of a discussion upon the ailments peculiar to the Doyenné somewhat unintelligible, and tend to convey a false impression of the attributes and quantities of the variety. I trust, Mr. Editor, that in these views you will fully concur, and give us no more Ver-gouleuse, except in its proper place upon the rejected list.

[It seems to us that Mr. Eaton admits precisely the point we aimed at. If "Virgalieu" is the term by which the White Doyenné pear is most generally known, (and this can not be denied) then to adopt the latter will produce just the confusion against which Mr. Eaton protests; and this is really the fact; for not half those who grow this pear will know what you mean, if you call it the White Doyenné. How, then, does this help the confusion? The fact is, teachers, at least, should aim to call things by their right names, and not bolster up a popular error, even in orthography. Now White Doyenné (not "Virgalieu") is the name that has been adopted by the Pomological Society, and by this the pear should be called and known, especially by Pomological Societies. In regard to the report alluded to by Mr. Eaton, no man ought to have a moment's doubt as to what pear was under discussion: we think that is clear enough. In common with Mr. Eaton, we aim to reduce our nomenclature to simplicity and correctness, and hope to do something to accomplish that desirable end. We have been more successful in our reading than Mr. Eaton; for we have found no less than seven variations of the orthography "Vergouleuse;" but then our studies for many years have been specially directed to such matters. Virgalieu, Virgaleo, Virgalou, Vergouleuse, *ad infinitum*, are all one and the same word; and to apply it, with a simple variation in orthography, to *three* distinct pears, (which is now the fact,) is, in our estimation, the very refinement of confusion. Where is this to stop? Now, Vergouleuse is undoubtedly the proper orthography; but as the variation Virgalieu is the most common, there can be no special objection to adopting the latter as the English form. But, then, we must alter the form of the winter pear, and call that Virgalieu too, simply adding the adjective "winter;" for none of us ought to be willing to designate two pears by the same word, with a variation in orthography; the distinction, if admitted, would catch the eye, but never address itself to the mind. Either way, but not both. We shall recur to the subject *in extenso*. In the mean time we shall hold on to White Doyenné.—Ed.]

THE "WEED AND INSECT DESTROYER" ASSOCIATION; OR, FEED THE BIRDS.

BY G. H. B.

MR. EDITOR,—When we go to Europe, especially to western Germany, we are surprised at the multitude of birds there, in comparison with those of our own land; and the cause of this scarcity with us is generally considered to be the wanton destruction committed on the feathered tribe.

This supposition is certainly correct to a very great extent, and is no commendation to the moral state of our society; but there is another circumstance by which our birds are destroyed annually to a still greater extent. This is, the excessive

character of our climate. Sudden changes from mild spring weather to most furious blasts of severe cold, sinking the mercury in Fahrenheit forty degrees within six hours, as we have seen it during last winter, are enough to kill any bird, especially when it suffers at the same time from hunger.

It was, then, as much from sympathy as from any other motive, that we resolved to feed these little sufferers. We had but a small company of them during the first winter; but the following summer we found that we were less troubled with certain insects, especially caterpillars and tree-borers, the latter having been very destructive to some of our plants.

When autumn came again, we commenced feeding much earlier, and secured by that a much larger company of boarders for the winter, and by them the amount of work done on our premises in proportion; for the birds are never idle, and the better they are fed the more active they will be. And they soon learn to know their benefactor. While walking through our garden and orchard, they will actually follow us, expressing their confidence and gratitude in sweet and pleasing notes; and while they are at the same time busily engaged in their work, we notice that every tribe of these birds have each their own particular office assigned to them by nature, or, (what is the same,) by their Creator. Here we see a flock of the common snow-bird, so named from the circumstance of their appearance during deep snow, as then they are prevented from prosecuting their natural employment. Every weed stalk which carelessness had left to ripen its seed is diligently looked for, and every grain of seed picked up. There, at an old apple tree, and in the corners of some ancient fence posts, are four or five individuals of the small blue woodpecker, (*Sitta*), in search of the hidden "Turks," while an army of the *Parus* family, (titmouse,) twist around every twig a dozen times during the winter, permitting no possible escape of a single egg that might produce an insect. But, behold the grave-looking *Picus minor*, with the small red band at the back of his head, hammering away for nearly half an hour at one spot in an old lilac tree just opposite our window; and although the day is cold, and snow-flakes float from all directions, he does not give up until the rascal there hidden is cut free and leisurely drawn out.

Where, then, is the planter or the digger, old or young, who would not give protection to aids like these? The task is easy, and affords an amount of true pleasure during the hours of dreary winter, and abundant reward in summer. Provide yourself in due season with three or four bushels of black walnuts, some hemp-seed, millet, and oats, and you are provided for as large a flock as you may likely draw together. We try to feed the snow-birds separate from the insect-eaters, by throwing some oats, millet, and a little hemp-seed on the ground of the south side of a stable, or on a board a little elevated, so that they are not annoyed by cats while they are eating; while the woodpeckers, &c., are fed with the cracked walnuts, hemp-seed, and once a week a little fine cut bacon, all put together in a shallow drawer, which we fasten under a window which opens just above the roof of a verandah. And here it is delightful to sit at the window, and see how the little folks approach their table, chirping to us as they behold the familiar faces of their protectors.

If circumstances had permitted, we should have tried long ago to import from Europe some of the moth-snapper varieties of birds, of which we have but too few, and so many there; for instance, the numerous families of the *Sylvia*, *Currucá*, and *Muscicapa*; also the grub-destroyer, King *Sturnus*, or starling, who follows every plow in the field; and of the *Passer* family, the *Fringilla domestica*. This bird is sometimes complained of as making free with cherries, and also helping itself to

some wheat or barley ; but no other bird will destroy as many caterpillars in the course of a day and throughout the summer as this is known to do. Professor Oken says, "As to benefit and harm which birds generally do, it is even not worth while to speak of the latter."

But if any one should attempt to import some of these birds, we would advise such to get them from the continent, perhaps from Bremen ; not from England, as those from the continent will be easier acclimated.

[A tender and suggestive plea for the birds, to which we heartily respond. We have only to look at the condition of the trees in our large cities, where the birds find no abiding place, to become convinced of the great service they render us. Let us, then, cherish and protect these beautiful denizens of the woods.—Ed.]

THE ANNA GRAPE.

(See *Frontispiece.*)

BY THE EDITOR.

We had purposed to give as a frontispiece this month a seedling Camellia, raised by the late Mr. Becar ; but as the engraver, through a misunderstanding, finished instead the Anna Grape, we give the latter. It makes no difference, except as it interferes with our plan of alternating a fruit and a flower. This grape originated with Mr. Hasbrouck, of Newburgh, was purchased by Dr. Grant, after a thorough investigation of its merits, and named by him *Anna*, after his daughter. Our engraving is a fair representation of the size of bunch and berry, taken from a vine five years old. The bunches are large, compact, and shouldered. Berries large, round, somewhat transparent, and covered with a white bloom. Flesh, melting, juicy, and sweet, with a peculiarly rich spicy flavor, and a musky aroma. Color greenish white, with a tinge of amber in the sun. Season, usually some ten days earlier than Catawba. Quality, *best*. It is, no doubt, a seedling of the Catawba, and closely resembles it in habit. On young vines, the fruit is sometimes a little hard, but, as in the case of many other fine grapes, this disappears as the vines acquire age. The fruit hangs well to the bunch, and should be allowed to remain till thoroughly ripe. Many of us have yet got to learn when a grape is thoroughly ripe. It is a good strong grower, and productive.



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

PLANTS, &c., RECEIVED.—From Mr. Erhard, trees of the Ravenswood Pear, a very nice early fruit, a portrait of which we have had in preparation since last summer. From Mr. Goodwin, of Kingston, Pa., vines of the Creveling Grape, already figured and described in our volume for 1860. From Dr. Bute, grape vines, and an oak from Africa. From Mr. Sackstader, vines of the Tully and an unnamed grape. From Mr. Richardson, very beautiful seedling Pansies. From Mr. Fuller, seedling Carnations; entirely wilted, however, before we saw them. From Mr. Pardee, the Kirtland Apple, of which an outline and description hereafter. From Mr. Daniel Barker, of Hartford, seedling Verbenas, and new Salvias and Dahlias. From Messrs. Ellwanger & Barry, Rochester, seedling Petunias, single and double, the former very curiously marked. From Messrs. Thorburn & Co., New York, a fine collection of new seeds. From Mr. Peter Henderson, Jersey City, new Verbenas, Lantanas, Fuchsias, Roses, Tigridias, &c. From Mr. Bridgeman, New York, new Fuchsias, Geraniums, Verbenas, Gladioli, Senecio, &c. From Mr. Linsley, of Meriden, a pot of Oscar Strawberries, ripe and very fine flavored. From Mr. Wilson, New York, New Roses, Geraniums, &c. From Mr. Pentland, of Baltimore, (right this time,) new Seedling Verbenas and New Roses. From Mr. Burgess, Brooklyn, a bouquet of Daphne cneorum, a hardy but rare plant, and deliciously fragrant. From Mr. Buchanan, of New York, collection of Gladioli, &c. From Mr. Hochstein, a collection of rare seeds.

AN AMATEUR "ORCHID"-IST.—This title belongs pre-eminently to our friend, Mayor Van Vorst, of Jersey City. Not that he grows Orchids alone; for he has at this moment in bloom the best collection of Azaleas that we have ever seen under one roof, each plant a specimen; he has also a rare collection of ornamental leaved plants, besides Camellias, Rhododendrons, (Sikkim) Epacris, Palms, Ferns, and individual plants not often seen any where; but Orchids are his forte, and of these he has an unrivalled collection in the best possible condition. What is infinitely to his credit, he takes the pride of a true amateur in showing them. Any of our readers who wish to see these remarkable productions of nature, will be sure of a courteous reception. As often as we have seen them, we never weary of admiring their grotesque but beautiful forms. Mr. Van Vorst has recently added a number of new and rare specimens to his collection; he seeks for them as a man seeks for hidden treasure, but with much better success. Almost any man can be a Mayor, (provided he is elected,) but very few can become accomplished Orchidists. With such a collection of plants, and such a gardener as Mr. Fleming, the Mayor is warranted in considering himself a happy man; we hope he is fully so.

THE TULLY GRAPE.—The reader may remember our notice and commendation of a small, very sweet grape received from Mr. Sackstader, of Louisville. A name being wanted for it, we have, after due inquiry as to its origin and history, determined to call it the *Tully Grape*, by which name it may hereafter be known.

BRIDGEMAN'S CATALOGUES.—The Messrs. Bridgeman have placed on our Table a complete set of their catalogues, neatly bound in one volume, and superscribed "*The Horticulturist*," for which we return them our thanks. This is a very convenient form in which to put them, and might be followed by others with advantage.

BUCKLEY'S POTATOES.—We have received from Mr. Buckley, of Williamstown, Mass., a sample of his seedling potatoes. They boil dry and mealy, and are of a rich, delicate flavor, superior, in our opinion, to the Peach Blow. The County Agricultural Society measured off an acre, and found the yield to be some 560 bushels! Who beats it? We purpose sending for a barrel of that seed.

WINE.—We are indebted to Mr. Anderson, of Dubuque, Iowa, for samples of tomato and blackberry wines. We do not, of course, compare them with grape wines, though they are better than many of those that we have seen; but the two classes are essentially distinct. Of the samples before us, the tomato is very good, one sample being much above the average; both are well made. The blackberry partakes more of the character of a cordial than a wine, and is a pleasant summer drink. Both samples seem to be free from artificial flavoring.

CIRCULAR—AMERICAN POMOLOGICAL SOCIETY.—At the last meeting of the American Pomological Society, held in Philadelphia on the 11th, 12th, and 13th of September, 1860, the following resolutions were offered by P. Barry, and unanimously adopted:

Resolved, That, in conformity with the recommendations of the President in his Annual Address, and of the General Chairman of the Fruit Committee, Samuel Walker, Esq., at the last meeting of the Society in the City of New York, a Local Committee of five be appointed in each State and Territory, which shall be charged with the duty of preparing a Catalogue of the fruits in its own locality, on the same general plan as the Society's Catalogue, due regard being had to soil, climate, position, and other circumstances affecting the tree and fruit, and that the Chairmen of such Local Committees shall be the Chairman of the State Committee, with power to appoint his associates.

Resolved, That a special Committee be appointed by the Chair at this time, to whom these various local Committees shall make their report during the year 1861; and that such Special Committee be charged with the duty of compiling from the Local Catalogues, prepared by the various Local or State Committees, and from the present Catalogue of the Society, full lists of all the fruits therein named, properly classified and arranged, with due regard to nomenclature and terminology, and shall submit the same at the next biennial session of this Society for its consideration and action.

The Committee appointed to carry out the objects of these resolutions have issued a circular, which we here append.

To the Chairmen of the several Local or State Committees of the American Pomological Society:

Dear Sir: At the last meeting of the American Pomological Society, held in Philadelphia on the 11th, 12th, and 13th of September last, (1860,) action was taken upon the revision of the Society's Fruit Catalogue, as will be seen by the subjoined extract from the proceedings, and the undersigned were appointed a Special Committee to receive the Reports or Catalogues of Local or State Committees, classify and arrange the same, and submit them to the Society at its next biennial session, to be held in Boston in 1862.

It is therefore our duty to request you, as Chairman in your State, to organize your Committee, and enter upon the work of preparing your Catalogue at once, so that it may be transmitted to us some time during the ensuing year, 1861, as provided in the resolution.

In preparing your Report or Catalogue, you will please observe that the arrangement of the present catalogue of the Society is to be followed as closely as possible, giving,

1st. A list of varieties suitable for general cultivation in your State, or such other region or district of country as your committee represents;

2d. A list of such new or newly introduced varieties as promise well;

3d. A list of such as are known to be valuable for special purposes, as for marketing, or for particular soils and localities only.

It is the design and aim of the Society to make its Catalogue so comprehensive and accurate that it may become the standard of American Pomology; hence it is important that Committees exercise the greatest care in preparing their lists, accepting such information only as they know to be perfectly reliable.

It will be understood that no varieties are to be classed for "General Cultivation" within any State or locality, upon brief or partial experiment, but must be *generally* and *successfully* cultivated for a considerable period of time. In the case of those classed for particular localities or purposes, the nature of these particulars should in all cases be given if possible.

Trusting you will find it convenient to give prompt attention to this work, we remain, very respectfully, P. Barry, *Chairman*, J. S. Cabot, L. E. Berekmans, J. A. Warder, Chas. Downing, William Reid, Marshall P. Wilder, *Pres. ex-officio, Committee*.

This, as we have heretofore said, is the most important movement yet made by the Society, and if faithfully and judiciously carried out, will be productive of most valuable results. The task is a laborious one, but we trust the Committees will set themselves about it with energy. The duty of the Committee, as we understand it, is not only to arrange and classify the fruits, but to determine their proper names and orthography; at least the catalogue, in these particulars, would seem to require no little revision. We purpose throwing into the form of an article some suggestions which we suppose may be of service to the Committee.

RASPBERRY WINE.—Mr. Doolittle has sent us a bottle of wine made from his new Raspberry. It would more properly be called a cordial, and will make a pleasant, cooling drink for summer.

EVANS'S RURAL ECONOMIST.—This is a new monthly, devoted to Agriculture, Horticulture, and Rural affairs. The first number is well printed, the matter good, and the whole has a promising appearance. It has made its appearance at an unpropitious moment, but we wish it an abundant success. It is edited by Dr. Edmund C. Evans, and is published at West Chester, Chester Co., Penn.

RHUBARB WINE.—We are indebted to Mr. Shotwell, of Rahway, for a bottle of his Rhubarb wine. It is a very good wine of its class, and well made. We should like to see a sample of it when about five years old.

SEEDLING PANSIES.—Stopping at the fine residence of Mr. Pillot, Orange, we saw a couple of very fine seedling Pansies, raised by his gardener, Mr. Carmohn. Both are large, and unexceptionable in form. One a deep, brilliant yellow, with a maroon eye, we named Sceptre d'Or; the other, nearly a sky blue, with a white eye, we named Mrs. Pillot. This is a unique and beautiful flower, of a very striking color. There are many noteworthy things about Mr. Pillot's place, which we may say something about hereafter.

THE NEW YORK STATE FAIR.—The Twenty-first Annual Fair of the New York State Agricultural Society will be held at Watertown, Jefferson Co., September 17, 18, 19, and 20. The prize list is liberal and judicious. Let the farmers of New York State do their duty, and there will be a good time at Watertown next September.

VINES WINTER-KILLED.—The past winter has been peculiarly hard on Grape-vines. The

older kinds, such as Isabella and Catawba, have been nearly killed in favorable localities, where we have never known them to be injured before. Such a winter may not recur again in a life-time; still, it is interesting to know what kinds are able to withstand even such vicissitudes. We are now collecting statistics bearing on the subject. The following is from a letter from Mr. Seelye of Rochester, N. Y.

"I have on one trellis several vines of Isabella, together with one Delaware, one Diana, one Elizabeth, and one Hartford Prolific. These vines are from six to eight feet high, well formed, with laterals. During the past winter the buds of Isabella have been nearly all killed to within two feet of the ground, especially those on the wood of last year's growth, and this wood also in many cases is destroyed.

The Diana vine has suffered to about the same extent as the Isabella, only the lower buds being alive.

The Rebecca was entirely destroyed within a foot of the ground, buds and wood. Hartford Prolific as bad as Rebeccas; and now the rub of the story is, that the Delaware on the same trellis, and having the same exposure, has not suffered in the least. The wood is perfect to the very tip, and every bud is now bursting.

I offer this as another testimony in favor of this delicious grape, and with the other reports that have been made this Spring to the same effect, it can not be much longer doubted that this variety must soon supersede, for general cultivation, all others now in use in the extreme Northern States and Canada."

SEEDLING PETUNIA.—We have received from Mr. A. G. Burgess, East New York, a remarkably fine Seedling Petunia. The flower is large, of good substance, well formed, and handsomely marked. The ground color is pale pink, with a well defined, deep rosy purple star. It is quite distinct, and in all respects first-rate. We name it *Purpurea Stellata*.

CANADIAN FARMERS' GAZETTE.—This is a new monthly newspaper published at Brantford, Canada West, at 50 cents a year. Augustus Webber, Proprietor. No. 2 has been enlarged, and otherwise much improved.

FRUIT WINTER KILLED.—Mr. B. F. Bartolet, writing from Eastern Pennsylvania, speaks thus of the destruction of fruit in that section of country. "Fruit growing in Eastern Pennsylvania is well-nigh done for this season. We may have a few apples and pears yet, if nothing happens to destroy them. On the morning of the 3d inst. we had a killing frost, and on the 4th it snowed. If it had not melted it would have been a foot thick; as it was, it lay from three to five inches. The grapes, all my dwarf pears, Chestnut trees, and many other trees and fruits, are totally destroyed. It is yet cold, and the curculio is at work on a few plums that remain. It is too cold for corn, which is not yet all planted, as the season has been, so far, a very wet one."

We have many similar accounts from different sections. In some places not only all the buds killed, but the trees themselves. The prospect for fruit the present season is meager indeed.

DUC DE MAGENTA Rose.—Mr. Barker, of Hartford, has sent us this new tea rose, lately originated by the French. It is large, full, and fragrant, and promises to be one of the best of its class.

THE NORTON GRAPE, OR NORTON'S VIRGINIA.—We have for some time been engaged in tracing the history of our native grapes, sifting the testimony and collating the facts. Some of these we are now prepared to lay before our readers. We shall begin with the Norton, in regard

to which we have reliable testimony tracing it back to a certain point. The following extract from F. W. Lemosy, Esq., gives the facts in a most interesting form.

"What is known as the Norton grape was discovered in the year '35 or '36, by my father, (Dr. F. A. Lemosy, of Richmond, Va.) Father was, during his life-time, very fond of ducking, and the waters of James River furnished ample means for the gratification of his desires, which he indulged in during the fall months whenever he could leave his practice for a few hours to do so. His resort for shooting ducks was an island in James River about four miles above Richmond, and known as Cedar Island. It is about four hundred yards long and about fifty yards wide, composed of large rocks, which hold the soil in its place, that supports a growth of cedars, oaks, and many wild vines.

"During one of father's rambles over this island, and while eating wild grapes, he chanced to discover a grape much superior to any other he had found there; so on his return home he carried a few bunches to my mother, who, on eating them, recognized a great resemblance to a grape much used for wine purposes in the south of France, the place of her nativity.

"This grape thus became known to us, and brother and I called at Cedar Island every fall for many years thereafter to gather those grapes, and indulge our boyish propensities for fruit. About this time Dr. Norton (one of father's companions) was establishing a small farm and vineyard near our city, and solicited all the information father could give him relative to the cultivation of the vine. It was during one of these conversations on the subject that father mentioned the existence of this wild grape on Cedar Island, and ventured the suggestion that it would make a good wine grape. The same idea was advanced to Mr. John Carter, who at that time produced wine from the Catawba. Well, it turned out that Mr. Carter reached Cedar Island first, and took away nearly the whole vine in cuttings. Dr. Norton arriving there after him, took the remaining stump, together with its roots.

"It is needless here to mention the fact, that brother and I never visited Cedar Island after the above facts were known to us.

"After a few years Dr. Norton developed this grape, and produced a very fine wine; and as he took more interest in it than any one else, we universally called it Norton's Grape, and subsequently Norton's Seedling; by which name I speak of it to this day from mere habit.

"It is proper to say that Dr. N. never claimed any credit for it as a seedling, but only as a wild grape of his adoption. It is a little paradoxical to me to find myself writing the history of an old grape vine that afforded me so much gratification during my youth.

"So much for reading the HORTICULTURIST.

"Refer to HORTICULTURIST, 1857, page 461. Report Pomological Society of Georgia, says: 'Being totally unlike its reputed parents, and agreeing sufficiently well in character with the species *Aestivalis*.'

"Very true, but not as respects its worthlessness.

"It is not generally known that the first and second crop of the Norton's Grape is always far inferior to what follows, and by cultivating to a single stake and spur pruning, bunches can be made to weigh a pound and a half and the fruit wonderfully improved."

The Norton Grape has been supposed by many to be a hybrid between the Bland and Miller's Burgundy; but it bears no internal evidence of the fact, as well stated by Mr. White; and Mr. Lemosy's account may be regarded as decisive of this point. Dr. Norton never claimed to have originated it. But we shall present more testimony on this subject hereafter.

BROOKLYN HORTICULTURAL SOCIETY.—The Spring Exhibition of the Society was held at the new Academy of Music, a very much better place than its former room. As we could not be present, we condense the following from notes sent us by a friend. The exhibition, we are glad to know, was a very good one for the season, and gave satisfaction to the public. The Society is now putting forth its best efforts; and when the public become convinced that it is

really a "live thing," it will not want for encouragement. The times, however, are most unpropitious. Not having received a list of prizes awarded, we append the list of contributions and leading articles, as sent us.

George Hamlyn, gardener to W. C. Langley, Esq., Bay Ridge, variegated and ornamental foliaged plants, such as Pavetta borbonica, Marantas, Caladiums, variegated Begonias, Sonerilla Margaritiacea, Eriomenia marmorata, Dracena nobilis and terminalis, Tradescantia, Rhopalitis, Crotons, Dieffenbachia variegata, New Pelargoniums, large plant of Chorozema, Musanda ponderosa, very singular and rare, choice collection of Ericas and Azaleas.

Robert Murray, gardener to James Patrick, Esq., State Street, choice Azaleas, Tropaeolum tricolor, basket of cut flowers, Chorozema Henchmanii, Pentstemon intermedia, Boronia tetrandra, Lechenaultia formosa.

Thomas Templeton, gardener to Estate of Alfred Large, Brooklyn, choice Azaleas, Pelargoniums, Cinerarias, Tree Mignonette in flower, large Geraniums, standard Geranium.

Philip Zeh, gardener to A. A. Low, Esq., Brooklyn Heights, splendid collection of Ferns and Lycopodiums, Fuchsias, Gloxinias, basket of flowers.

John Eagan, gardener to J. Roch, Esq., Staten Island, stocks and Tropaeolum tricolor.

Geo. Stein, gardener to John T. Martin, Esq., Brooklyn, choice Azaleas, etc.

Henry Tanner, gardener to Hon. A. S. Stranahan, Brooklyn, collection of Cinerarias and Fuchsias, String Beans and Lettuce, very fine.

President J. W. De Grauw, choice Azaleas and miscellaneous plants.

B. C. Townsend, Esq., Bay Ridge, new and rare Caladiums.

John W. Wood, Washington Heights, splendid Stocks.

Louis Menand, Albany, N. Y., large collection of rare and variegated-leaved plants, consisting of the Fan Palm, Marantas, Dracennas, Begonias, Crotons, Golden Arbor Vitæ, variegated Yucca and Daisy Ferns of the Golden, Silver, and Tree varieties. Also, the new and rare Tricolor Fern, Sago Palm, Erica, Pimelia, Aphelexia.

John Humphery, corner of De Kalb and Washington Avenues, Washingtonia gigantica, or mammoth Pine of California, Golden Arbor Vitæ, Aucuba Japonica, variegated Holly, very beautiful; variegated Pittosporum, Dracena spectabilis, 2 seedling Camellias, very fine; cut Camellias, choice Azaleas, variegated Begonias, new Fuchsias, American Pitcher Plant in flower, new Pelargonium, Indian Rubber Tree, Wardian Cases, or Parlor Conservatories, basket of Cut Flowers, 2 hand Bouquets, stand of Cut Flowers, stand of Pansies.

Poynter & Foddy, Smith Street, choice Verbenas and Roses.

Dailedouze & Zeller, Myrtle Avenue, corner of Yates, new monthly Carnations, extra fine; Auriculas, double White Wistaria, very scarce and rare; Clematis, Cut Roses and Pansies.

James Weir, Bay Ridge, choice Roses, basket of Cut Flowers, table Bouquet.

Henry Hudson, Congress Street, hand Bouquets.

John Friend, Fulton Street, Callas, Roses, and Verbenas.

D. Saul, Brooklyn, collection of Rhubarb, Lettuce, and Radishes.

Thomas Prosser, Jr., Bedford, collection of Rhubarb and Water Cress.

O. Eberhardt, 218 Grand Street, New York, new style of Flower Pots, Hanging Baskets, Fern and Wardian Cases, Bouquet Stands, all made of zinc by a patent process, and beautifully ornamented like china.

W. V. Bloom, 364 Atlantic Street, Brooklyn, Forcing Glasses, with ventilators.

Mr. Gordon, of Astoria, a fine general collection of plants.

Mr. Davenport, of Stamford, Conn., tasteful and well made wire baskets.

At a subsequent meeting of the Society, the President read an interesting paper on the Influence of Horticulture, extracts from which we shall give in our next.

CATALOGUES, ETC., RECEIVED.

Catalogue of Vegetable, Agricultural, and Grass Seeds, and a choice collection of Flower Seeds, comprising in all upward of six hundred species and varieties. Also, one hundred varieties of French Hybrid Gladiolas; Tuberoses; Spring Bulbs of all kinds; Bedding Plants of every variety, well worthy the attention of Florists and Amateur cultivators. Cultivated, imported, and for sale by *Joseph Breck & Son*, Seedsmen and Nurserymen, Noa. 51 and 52 North Market Street, (Up Stairs) Boston.

Speeches of Hon. Henry Edgerton, of Napa, and Judge Burbank, in the Senate of California, on the Resolutions upon the State of the Union.

Speeches of Hon. D. P. Durst, of Colusa, Hon. Alexander Campbell, Hon. Z. Montgomery, of Sutter Co., Hon. John Dougherty, of Sierra Co., Hon. Thomas Laspeyre, of San Woaquin Co., and Hon. W. D. Harriman, of Placer, on the Resolutions upon the State of the Union, delivered in the Assembly of the State of California. For the above California documents we are indebted to Col. Warren, of San Francisco.

Wholesale Price List of Fruit Trees and Plants, Avondale Nurseries, on the Reading Pike, 2½ miles from the City. Depot, 201 Walnut Street, Cincinnati, Ohio. Anthony Pfeiffer, Proprietor.

The Principles and Practice of Land Drainage: embracing a brief History of Underdraining; a detailed Examination of its Operation and Advantages; a Description of various kinds of Drains, with Practical Directions for their Construction; the Manufacture of Drain Tile, &c. Illustrated by nearly 100 Engravings. By John H. Klippart, Author of the "Wheat Plant," Corresponding Secretary of the Ohio State Board of Agriculture, &c. Cincinnati: Robert Clarke & Co., 1861. This is a well written, comprehensive, and thoroughly practical work, which every tiller of the soil may read with profit.

Poughkeepsie Nursery. Descriptive Catalogue of Small Frutis, etc., cultivated and for sale by *Edwin Marshall*, Garden Street, Poughkeepsie, N. Y., for 1861.

The Journal of the New York State Agricultural Society, March and April, 1861.

Honey & Co.'s Catalogue of Seeds, containing descriptive Lists of the most approved Garden Vegetables, and an unrivalled collection of Flower Seeds, etc. Also, an extensive assortment of the best Agricultural and Grass Seeds, Garden Implements, and Horticultural and Agricultural Books, etc. 1861.

Report of the Special Committee on the Culture of the Grape-Vine in California. Introduced by Mr. Morrison, under the resolution of Mr. Gillette, to examine into and report upon the growth, culture, and improvement of the Grape-Vine in California.

Lenk, Hansen & Co.'s select List for 1861 of Flower, Garden, and Agricultural Seeds, for sale at their Seed and Horticultural Warehouse, Noa. 161 and 163 Summit Street, Toledo, Ohio.

Abridged Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Bulbous Roots, etc., cultivated and for sale at the Wilson Garden and Nurseries, by *S. Richardson & Co.*, Olcott, Niagara Co., N. Y.

First Annual Report of the Commissioners of Prospect Park, Brooklyn.—Lieut. Vielé will please accept our thanks for the above, which we shall read carefully.

C. W. Seelye's Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, etc., cultivated and for sale at the Rochester Central Nurseries, New Main and Union Streets, Rochester, N. Y.

List of Plants cultivated by *Thomas Morgan*, Florist, Lyons Farms, between Elizabeth and Newark, N. J.

Premium List and Regulations for the Ninth Annual Exhibition of the *Illinois State Agricultural Society*, to be held at Chicago on the 9th, 10th, 11th, 12th, 13th, and 14th days of Septem-

ber, 1861. Competition open to the world, except as noted in the list. All railroads terminating at Chicago will convey passengers at half fare, and articles of exhibition free.—This is a well-digested and liberal prize list, the cash premiums amounting to \$20,000. Some liberal minded gentlemen of Chicago have added a special list of prizes amounting to \$2,000. All this ought to produce a grand exhibition.

Catalogue of Fruit and Ornamental Trees, Shrubs, Plants, Vines, and Roses; also, Garden, Field and Flower Seeds, for sale by A. G. Negley & Co., No. 171 Walnut St., Cincinnati, Ohio.

Spooner & Co.'s Catalogue of Fruit and Ornamental Trees, Shrubs, Bulbs, Green-house and Garden Plants, Jamaica Plains Nurseries, Jamaica Plains, Mass.

Catalogue of Azaleas, Camellias, Roses, Fuchsias, Dahlias, Verbenas, and other green-house plants; also, Hardy Trees, Shrubs, and Fruits, including Evergreens, Deciduous Ornamental and Shade Trees, with a choice selection of Small Fruits, cultivated and for sale at the Helendale Nurseries and Seed Farm, Kingsessing, Philadelphia. John Dick, Proprietor.

Correspondence.

IMPORTED ROSES.—*Mr. Editor.*—It is presumed that when persons send articles for publication to any journal, they have something to communicate that will be of interest or a source of instruction to the general reader, or class of persons to whom it applies, and, also, that it will embody nothing but facts well known and reliable.

The contribution of Mr. A. S. Fuller in the March number of the *Horticulturist* under the above head, treats of matters in which Florists and Nurserymen are principally concerned, and doubtless intended to give them some information, which it is inferred they did not possess until the writer made it known.

Now the article in question, setting aside the many meaningless expressions referred to in my former article, (not to say any thing of those discriminating rats on shipboard,) does not convey a single item of instruction to those engaged in the business, and the only tendency it has is to mislead the mind of the general reader, as to the actual cost to Nurserymen of such stock, whether purchased here or in Europe.

I now propose to place Mr. Fuller's contribution and his defence thereof, as published in the May number, both together, and with his permission have my final say on the subject. In doing so I will not descend to notice the innuendos and little personalities contained in the latter, but only touch upon such items that are given as facts that may be worthy of notice, or of interest to the reader.

The first article asserts that Roses can be imported from France, with all the expenses paid, at an average cost of \$13.55 cents per hundred, and this he thinks in his defence is an over-estimate.

Let the reader notice how Mr. Fuller sustains this position on page 244, fifth line. "We wish the gentleman to understand that we do not say that Roses can be purchased in France for \$70 per thousand, if the Nurseryman is restricted to certain varieties." Well done, Mr. Fuller; why did you not mention that before? had you done so, none would have thought of opposing your figures, but would rather have assisted you to have brought them down still lower, if you desired it; for we know of parties who have purchased as low as \$40 per thousand, but only of such varieties as the growers may have had left over from a former season, or such as they may have a surplus of; they consist generally of good plants of inferior and free-growing varieties, and poor plants of really good varieties. Such roses might well be sent by sailing vessels, as they could not be made to pay the steamer's freight, unless they were sold at auction.

to ignorant purchasers, or offered at retail at moderate prices, with the popular addenda of "own selection," which is one of the inflictions we would pray to be delivered from.

Mr. Editor, suppose I were to write you an article on Dwarf Pears, and in it assert, that the cost of purchasing them here was \$15 per hundred, you would at once say, and with truth, that it was an under-estimate, yet it would be just as true as this assertion of Mr. Fuller's, and like that, convey a false impression to the reader.

It is well known that when Nurserymen have a field of Quince or Pear stock ready for budding, they will bud them with such varieties, all believed to be good, and in such numbers of each as, in their judgment, will enable them, when of an age to sell, to clear the whole field at once; yet it will often happen that many varieties will remain unsold, and good varieties too, and the grower would be pleased to sell the remainder for any merely nominal price to enable him to clear the ground and prepare it for a new stock. So with the rose growers of France; after their regular customers are supplied, they will sell the refuse for any price that will pay for digging and labeling, and if Mr. Fuller has bought them at these prices, it only shows what kind of stock he has imposed on his customers.

I would not be uncharitable or seek to leave a false impression, although his defence forces me to the conclusion above given, for I happen to know that the roses Mr. Fuller sells are not all of this description. He has sold some first-class roses, and has had to purchase them, too, at \$25 per hundred, and could not get all the varieties he wanted at that, although he tried at more than one place to obtain them.

In continuation of the paragraph before quoted, Mr. Fuller says, "Neither can he purchase large, strong plants of Hybrid Perpetuals under the same rule, (*i. e.*, the purchaser to name the varieties.) But if he gives his orders for so many thousand roses, *assorted* varieties, then they can be had here at \$16, and in France at \$7 by the thousand."

Mr. Fuller, let me say a few words intended for your private ear. I sell thousands of roses, and have purchased thousands annually, and grow also as many as I can myself without interfering with other descriptions of stock. In purchasing I always name the varieties I want, and also allow my customers to make their own selections, and notwithstanding all my endeavors, I can not get enough of some varieties to supply the demand at any price, for I would at any time prefer to purchase at the selling price to complete orders confided to me, rather than let them go unfilled; and this principle I do not arrogate to myself, but believe it is applicable to every honest Nurseryman in our goodly land.

To proceed further, Mr. Fuller would place Angers in the same relation to France, as Paestum in Lucania was to ancient Italy. Had he mentioned La Brie, comprising Villecrane, Brie-comte-Robert, and Suine, instead of Angers in his compliment to Rochester, (for which I hope they will be grateful,) he might have come nearer the truth, for the little village of Villecrane alone produces more roses annually than Angers does.

Mr. Editor, allow me in conclusion to thank you for your indulgence in permitting me a second time to occupy your columns, and also to extend to Mr. Fuller the assurance of the most kindly feeling, with the hope that it may always be maintained.

Very respectfully,

ANDREW BRIDGEMAN, 878 Broadway, N. Y.

HOUSE PLANTS.—P. B. MEAD, Esq.—*Dear Sir:* I think many would like to indulge in the above, who are deterred by the fact that plants generally do not thrive if kept continuously in living-rooms. Even when, by extra care, they are got to do so, there is always necessarily a portion of them out of bloom, which are not desirable there, and would be better away in a proper place. I propose that the gardeners tend plants, calling around at intervals to take away those not in order, and return those that are. If they did this, people would buy the more permanent and expensive plants, which now they will not; if they get any they purchase the cheap ones, and when they get out of bloom, throw them away. Or the gardener

could own plants, agreeing to furnish a certain number per season. I think they could largely increase their trade by either or both of these methods.

As you remarked some time back, the common stands are very objectionable; they should have troughs, in which the pots could be bedded in sand. In connection, I would call your attention to Mr. S. B. Parsons' proposition, to roof city houses with glass; this would give a good greenhouse in any aspect, not perhaps in the most desirable place, but certainly better than none.

BROOKLYN.

April 15, 1860.

[Always glad to hear from you, Brooklyn. Your suggestion is a capital one, and would open a source of pleasure to many who are now deprived of it. There are a few such houses in New York as Mr. Parsons suggests, and they answer the purpose well.—ED.]

MR. EDITOR:—When I was superintendent of the Nurseries of the Institute Royal Horticole de Fromont, near Paris, M. Soulange Badin, proprietor and director of the said institute, received from Dr. Guillemin, our Professor of Botany, in the year 1834 or 1835, four tubercles of *Solanum Montanum*, (?) with the following letter:

"I send you, my dear friend, four tubercles, extremely precious. They have been given to me by M. Dorbigny, who received them from M. Fontaine, Chirurgien Major of the Griffon, commanded lately by Captain Dupetit Thouars. This traveller gathered them at the summit of the mountain of San Lorenzo, near Lima, at 600 fathoms in height, in a sandy soil and humid atmosphere. I think these tubercles are those of the *Solanum Montanum*, (Lin.) figured by Father Feuillie Ruiz and Pavon. This Solanum is quite distinct from the *Solanum tuberosum*; the tubercles are not lateral like those of the potato.

"M. Fontaine assured me that they were very good to eat, with the savour of the bottom of the Globe Artichoke; and, besides this, that they were aphrodisiacal in quality, which makes them recherched by the old bachelors of Valparaiso, who plant them in their gardens. This gives the explanation of the rarity of the specimen reported by our traveler. If this property is confirmed, I have no doubt of the same success at Paria."

Only one root began to grow, and died a few days after. At the Jardin des Plants of Paris, they have met with the same ill success. C. MORE.

[The above contains some very interesting facts. The quality imputed to this tuber we have no doubt is purely imaginary. A tuber, however, with the flavor of the Globe Artichoke, might be regarded as a luxury. Can any of our readers furnish further information in regard to it?—ED.]

DEAR SIR: The note of inquiry which we had addressed to you on a former occasion was mainly in regard to a remedy against the ravages of mice on our *osage orange hedges*; that if some available remedy can not be instituted, we shall have to abandon this beautiful and otherwise excellent fence in this vicinity. They injure this hedge by girdling the roots.

Olney, Pa., Feb. 16th, 1861.

Respectfully yours,

P. G. BERTOLET.

P. S.—Will the ammoniacal exhalation of horse manure, placed under plum trees, prevent the ravages of the curculio? and when is the proper time for its application, spring or fall?

R.

[Your first note was lost in the fire, as we wrote you. This one, after a long tour, was placed in our hands by Prof. Lane, of Middletown University. How this happened, Uncle Sam might be able to tell; but he is probably too busy just now. Your annoyance from mice is a very serious one. If a space on each side of the hedge, and close up to the stocks of the plants, is kept well cultivated and free from weeds and grass, the evil will be greatly lessened. Costar's Exterminator (as well as Lyon's Pills) is a good remedy, used according to directions; but it is a deadly poison, and if eaten by your poultry or domestic animals, will be sure to

kill them. You must judge of the safety of using it. A number of remedies have been recommended, but we have no personal knowledge of any except the above. Try this before sacrificing your beautiful hedge. The ammoniacal exhalation of horse manure will not prevent the ravages of the cureauio; but if you wish to try it, you must apply it just before the blossoms begin to fall, and renew it from time to time till the plums are as large as hickory-nuts; if any get to that size under this treatment. This, however, has been sufficiently tried without success. Try the sheet recommended in our last number; that, to a great extent, is sure though troublesome. Try, also, Mr. Cumings's remedy and the Gishurst Compound, not as curee, but as *preventives*. Begin when the plums are no bigger than peas, and repeat from time to time during the season. Try, again, Mr. King's tar remedy in our last, and report the result to us for the benefit of others. Here is a chance for you and others to do good, if you have the inclination and time.—ED.

MODE OF DRYING THE COMMON RED Currant.—*Mr. Editor:* The currants should be quite ripe when gathered, with the stems attached, and washed or rinsed effectually and drained off. Then stem them and wash them thoroughly, and to each pound of currants add a quarter of a pound of good Havana sugar; then place them in a preserving kettle over a fire until they come to a *scald heat*, when they are turned out into white earthen dishes, and exposed to the action of the sun until, by evaporation, they become hardened on the upper side. Then they are turned over, and there remain until they become so on the other side, and so alternate until they become a sort of leathery texture, when they are put away in earthen jars or boxes until wanted for use. Care must be taken to keep them from the dews of night and rains during the process of drying; finally, the utmost cleanliness should be observed from first to last.

When used, enough hot water is required to dissolve them or render them to any consistency suitable for tarts, jelly, &c. At the same time, more sugar is required to make them quite palatable, which must of course be governed by taste. Currants in this way have kept well with us for three years, and the presumption is, that they will keep for a longer time if well cared for.

Morrisiana, March, 1861.

Mrs. GEO. H. HITE.

[Mrs. Hite lately sent us some currants dried as above, which pleased us so much that we sent a request that she would furnish us a description of the mode of preparing them, which we here lay before our readers. We commend it to our lady readers as an excellent method of preserving their surplus stock of currants.—ED.]

MR. PETER B. MEAD, ED.—*Dear Sir:* In your favor of the 1st of this month, you asked of me to name to you the best native grapes for wine. Of these the Delaware is undoubtedly the first, although it may not be the most profitable. I am inclined to call the Diana No. 2, but have not had sufficient experience in cultivating this grape to *determine*, and will therefore rank the Lincoln second in quality; next is Herbemont, which far exceeds both the foregoing in bearing and growth, and, I think, if it be fully tried, will prove one of our first wine grapes, especially in the South. The afore-named grapes all far exceed the Catawba in quality, though not in *every* other respect.

The Delaware wine, in my opinion, far exceeds any native wine. It has more strength than any of the rest, and will consequently keep longer.

The Lincoln wine is red, and, in my opinion, equal to the Norton's Virginia, if not superior.

The Herbemont is a grape of which the qualities and advantages are not yet known, although it has been cultivated a long time.

The Marion grape will produce more, and make better wine than any of the Isabella species, of which there are at least half a dozen kinds.

Should my remarks on this subject be too limited to answer your purposes, please call again, and I shall endeavor to satisfy you with the greatest of pleasure.

CINCINNATI, O.

Yours very respectfully,

C. F. SCHNICKE.

[The above from Mr. Schnicke is in response to an inquiry as to the best wine grapes, so far as tried. We are obliged to you for your answer, and shall accept your invitation to "call again." Mr. Schnicke is among our most successful wine makers, and his opinion is entitled to consideration.—ED.]

NEW ZEALAND SPINACH.—P. B. MEAD, Esq.—*Dear sir:* I note article on above in April number. I beg to say that I do not think it a desirable vegetable for this latitude. It is good, but does not come in at the right season. Kidney and Lima Beans, Egg Plants, Squash, and Tomatoes, take the preference, when it is at its prime, and it stands unpicked; at least this is my experience. Frost spoils it. I think, with Mr. Moré, it would be valuable South. It could there be grown for Spring and Fall, as the common is with us. If he and yourself will notice this season, believe you will find that you do not care for greens in midsummer.

SWISS CHARD BEET. I am much pleased with this for greens. It can be raised as Spinach is, or the spring sowing can be allowed to stand. Early in Fall cut off the summer growth, when it will shoot out new leaves, which can be cut until December. Should think if the roots were preserved and planted out in spring, they would give an early crop. In cutting care should be taken not to destroy the crowns.

April 4, 1861.

BROOKLYN.

[But the New Zealand Spinach is really in season long before you can get Lima Beans, Egg-Plant, Squash, &c. It is in season quite as soon as spring sown Spinach, and continues until frost. At our hotels, Spinach is in demand whenever it can be had. Many will eat it during the Summer in preference to early cabbage, and it is grown with much less trouble. On the whole, we think a place had better be given to the New Zealand Spinach. The Swiss Chard will make a valuable addition; this, like the other, is too little grown. The roots planted in spring soon run to seed. We hope some of our readers will give both a trial.—ED.]

PETER B. MEAD, Esq.—*Dear Sir:* I have refrained saying any thing more in regard to the Delaware grape, as I knew an article was forthcoming which would set its *nativity forever at rest*; after which I shall make my comments on the characteristics of the Native and Foreign species and varieties of the vine. The *original* Delaware vine is now growing at Pottstown, Montgomery county, Pennsylvania, it having been transplanted there by the Prevost family. The next Report of Transactions of the Fruit Grower's Society of Eastern Pennsylvania will contain the full history of the *foreign* Delaware grape, which *prejudice and lucre* have so long striven to *naturalize*.

Yours most respectfully,

MARCH 27, 1861.

WM. R. PRINCE.

[We shall wait patiently for the report alluded to, and your own comments on "the characteristics of the native and foreign species and varieties." In the meantime, we except to your remark, that "prejudice and lucre have long striven to naturalize" the Delaware grape. It is a slur on some of the best minds in the country. Suppose they retort upon you, that prejudice and lucre have sought to make it a foreign vine; do you or they thereby prove any thing as to the origin of the Delaware grape? Certainly not. In all that we have said personally on this subject, we have imputed no unworthy motives to any body: we have carefully avoided all such irrelevancies. We have always recognized the fact, that a man is entitled to his honest convictions without having his motives impugned. A man's convictions may be wrong, but to question his honesty is not the best way to convince him of the fact. Do let us honestly try to get at the real facts in this matter. We are always open to conviction.—ED.]

THE NEW YORK PIPPIN was introduced here by B. Bruington, Esq., from the nursery of

J. Allen, Hardensburg, Ky. Mr. Allen writes me that his trees were propagated from scions cut from trees, the scions of which were cut by Jas. H. Davis from a tree in New York, about sixty years since, who grafted them at his farm on the Ohio River at the Yellow Banks.

Mr. Davis called it the New York Pippin. It is productive, a long keeper, and of fine appearance, trees in nursery, some injured by the winter of 1855 and 1856. I have selected eighty specimens that measured one bushel. The variety has been grown here about twenty-five years.

A. WILLIAMS.

Galesburg, Ill., March, 1861.

[Any thing throwing light on fruits of doubtful origin is always welcome. It would seem, on the whole, that New York Pippin is the proper name for this apple.—Ed.]

To THE EDITOR OF THE HORTICULTURIST.—MR. EDITOR: I would like to say a few words in regard to the disease of the Verbena called the "black rust."

The disease is beginning to show itself among us here, and as I was examining a few plants that were affected with it the other day, the idea suddenly came into my head to try the effect of hot water upon them.

I took six of them (different kinds) from the greenhouse, to the house, and dipped them successively into water heated to between 125 and 130° Fah. I dipped and rinsed them in the hot water for about half a minute, and then set them one side to dry. This I repeated two or three times in the course of the week, and on going to look at them the day after the last dipping, I found that the "rust" was entirely gone from all of them, and the plants looking as healthy as ever, and so they continue to this day, not showing the least sign of "rust" upon them.

I mention this fact, so that persons having a few Verbenas that they are desirous of saving or curing of the "rust," can try it. It is safe and simple, and will not injure the plant in the least.

Of course florists having large quantities of Verbenas could not adopt this plan, as it would not pay for the immense trouble it would cost; but it might answer where they had a few choice kinds that they were desirous of saving.

If any of your correspondents, Mr. Editor, try this plan, I should be glad to know how they succeed.

Yours, &c.,

R. B., Jr.

Springfield, Mass., May 7, 1851.

[The "rust," for a couple of years past, has been very destructive around New York. Last season, many of the florists lost a large portion of their Verbenas. Any remedy that will meet the case will be most welcome. Mr. Henderson, in the last *Gardener's Monthly*, states that the disease usually makes its appearance on plants propagated late in the season, especially when cuttings are taken from plants that have been touched by frost. He says that he escapes the disease by taking his cuttings early, and growing the plants in a uniform, low temperature. We know that his plants have been free from the disease when some of his neighbors have lost nearly all their stock. The subject is worthy of investigation. We think "high breeding" has much to do with it, and "vegetable gout" would not be a bad name for it.—Ed.]

GARDENERS AND PRETENDERS.—MR. EDITOR: As I have made a few remarks in your last number permit me to add a few more. This being the first year in 21 that I have been disengaged, I thought I would take a run around, to see how matters stood among the fraternity in gardening in our eastern cities. I visited the city of Bangor, much noted for horticulture, and I must say that great credit is to be given to the ladies of that city for their great zest and love for flowers. Still, we know they can not perform the hard labors in the gardens, of pruning, training, digging, &c., and must hire a gardener. This can be accomplished very easy, for gardeners are so numerous that one could be set to every vine in the city at the same time to prune it. One evening I met one of them coming from one of the principal private gardens in

the city; asked him if he was the gardener. "Yea." I asked him what he called that vine, traversing over a portion of the house. "Why, that is a grape-vine," said he. "Do you ever prune it?" said I. "Oh yea," said my brother gardener. "I am going to tie it up, and see to it tomorrow." "Well, it seems to grow well," said I. "Yes, man, it will grow to the top of the house this year." You may judge of the knowledge of brother G., when he did not know the difference between a grape-vine and the Virginian Clematis. Anxious to take a look in the garden, I took the liberty of entering. There I saw currants growing as thick as a tuft of rushes, with I suppose seven-year old wood, all of which was suckers.

I made it my business to go and see one who was considered a professor in working about greenhouses; he did not really know the difference between a span roof house and a lean-to. There are European pretenders of gardening, men who occupied no other position than diggers; they come here and they are gardeners; but, as I said in my last, where there are European gardeners, they can not be confounded; they know gardening in all its branches; but from their constant labors, together with having to study the new introductions which are daily made to the floral and vegetable kingdoms, they can not become such refined penmen. But no matter how simple may be their writing, there will be more truth and information contained in it than can come from any other source.

There is another class of gardeners, which I call old petti-fogging fellows, who knew a little of gardening in Adam's days, and you can not convince them of any improvements in gardening of modern times. They do not read a book, for they really believe that the reading of horticultural books is just the blind leading the blind. Asked one of them about fruits and flowers of superior merits of modern times; they know them not. These are the men who impose upon the public, and hurt the *reputation* of good gardeners. But, Mr. Editor, I will tell you of one thing I saw this spring, which I was sorry for; a fruit and vegetable garden, that its owner, a noble and generous horticulturist, had spared neither money nor his attention to render a source of happiness, as well as a most valuable appendage to his splendid new establishment; it promised last year to be every thing that could be desired in that department; this year, in my opinion, it has lost its whole character, if you think the following a means of doing so. In the centre of this magnificent garden this year I see close to its handsome gravel walks a Bee house; in another part a hot-bed; and another structure, as I was informed, elevated to a high eminence, to be seen from all parts of the grounds, as follows: lawn, flower garden, green-house, viney, summer-house, and as an ornament in the kitchen garden, conspicuous to every eye, for the accommodations of Mr. G. and his workmen, an unsightly looking privy. If you, Mr. Editor, should think those taking away the character of a highly kept garden, say so, as it might learn others not to commit such errors.

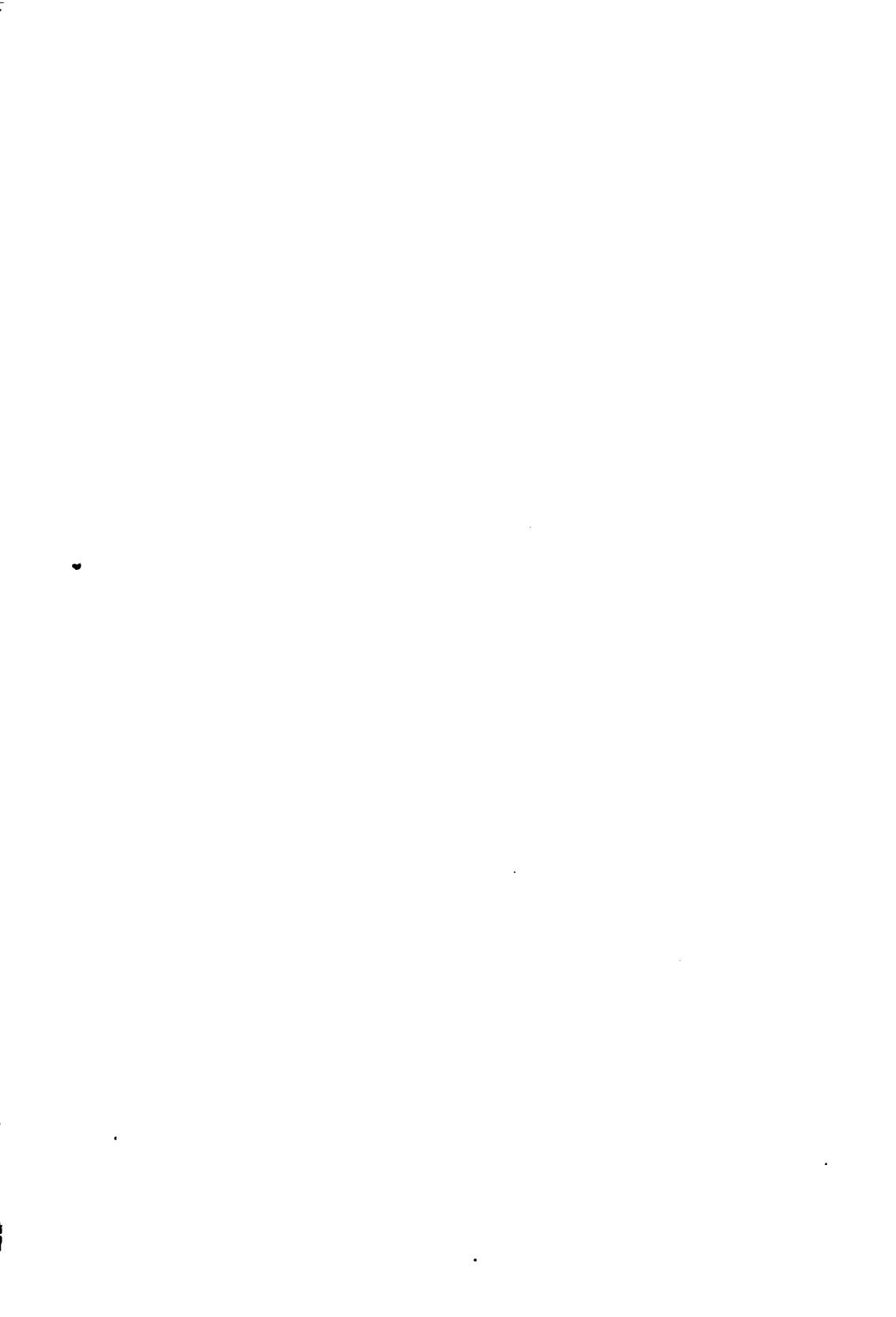
This is a hard working time for gardeners to write, but perhaps you will make this article out. This last mentioned place is in Portland or its vicinity.

Limerick, Me.

Yours,

J. C. RILLY.

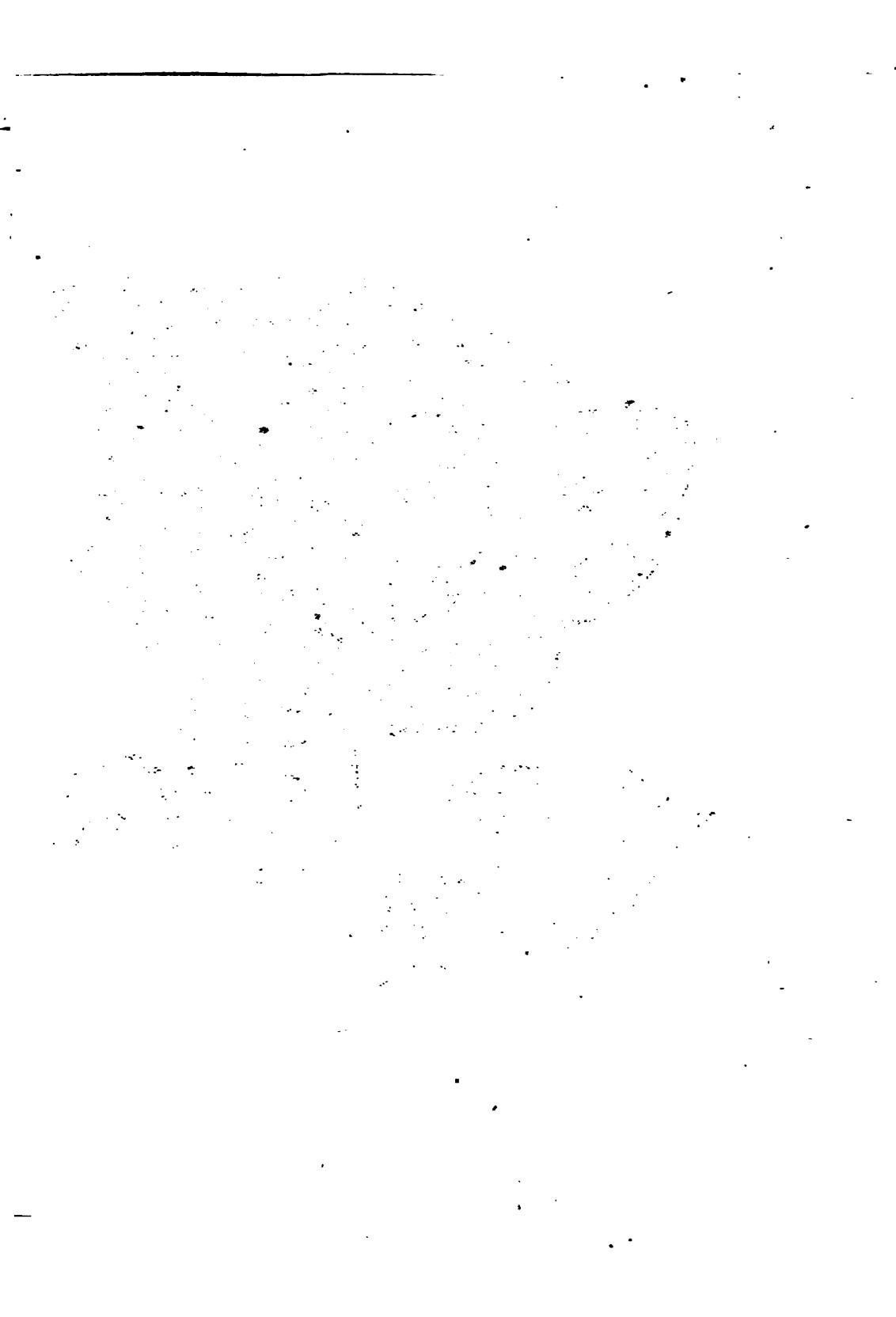
[There are undoubtedly some pretenders and bunglers among your brethren, and we are afraid you have got more than your proportion down in Maine; but then there are also many intelligent and really excellent men among them. Something like a weeding process would seem to be desirable. A gardener who does not read is a pitiable object, unfit for any responsible position; he belies his profession and degrades himself. A bee-house may very well be introduced as a *distant* object in the grounds, but it must be of a purely ornamental or rustic character; it should never be by the side of any frequented walk. The unsightly object you allude to is out of place: the idea of introducing such a thing as an ornament is absurd. If it must be placed where seen, let it be concealed as much as possible by vines and clumps of shrubs. *Forecast* as well as *foretaste* is needed in all these matters.—ED.]



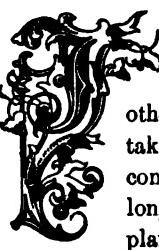


CAMELLIA SPPALIS RUBRA.
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Hints on Grape Culture.—No. 5.

N the plan we have adopted, we come next to the consideration of the distance at which the vines should be planted, and the distance of the rows from each other. Some plant a foot apart; others a dozen feet or more. In determining thesee points we must take a number of things into consideration. It may be assumed that compact, short-jointed kinds should be planted closer than coarse, long-jointed kinds; hence we have found it in practice a bad plan to plant vines of dissimilar growth promiscuously in the same row.

Where there is a necessity for planting several kinds in the same row, those of similar growth should, as far as possible, be planted side by side. By discriminating in this way, not only will much labor be saved, but the trellis will present a much more sightly appearance. The system of training adopted will, in some cases, determine at once the distance at which the vines should be placed in the rows; for instance, if Mr. Bright's system be adopted, the distance will be one foot only, that being one of its distinctive features; if the Thomery, the vines will be two feet apart. In the vineyard, different persons recommend, where arms or standards are used, that the vines be planted from six to twelve feet apart. We have tried various distances with horizontal arms, and have realized the best results thus far with the vines four feet apart. With such rampant growers as the Concord, however, we are inclined to think that six feet will be found none too much. When vines are grown to stakes, they are usually planted from two to four feet apart. The nature of the soil, too, must be taken into consideration in determining the distance at which to plant. It seems clear to us that a poor soil can not sustain as much growth as a rich one; yet some leading authorities say, "the *richer* the soil the greater the distance." Our experience, however, compels us to say, with the greatest respect for these authorities, "the *poorer* the soil the greater the distance." In a soil prepared as we have directed, and where the "arm" system is adopted, we should say not more than four feet for such vines as the Delaware, Isabella, Rebecca, &c., and not more than six for such as the Concord, Herbemont, Union Village, &c.; and even a closer classification might be made with advantage. In the bow and renewal system, the vines may be planted two or three feet apart, according to the kind of soil and vine; how much closer, our experience does not yet enable us to say. In the "arm" system, however, our general rule is four feet. On trellises, of course, the vines must be planted in rows; these rows may be straight, or they may have a slight curve. Where stakes are used for the bow or renewal system, the vines may be planted in rows, squares, or the quincunx.

The Thomery is so little understood that we append an illustration. Fig. 1 indicates the manner of planting a layer on this system, C being the earth thrown

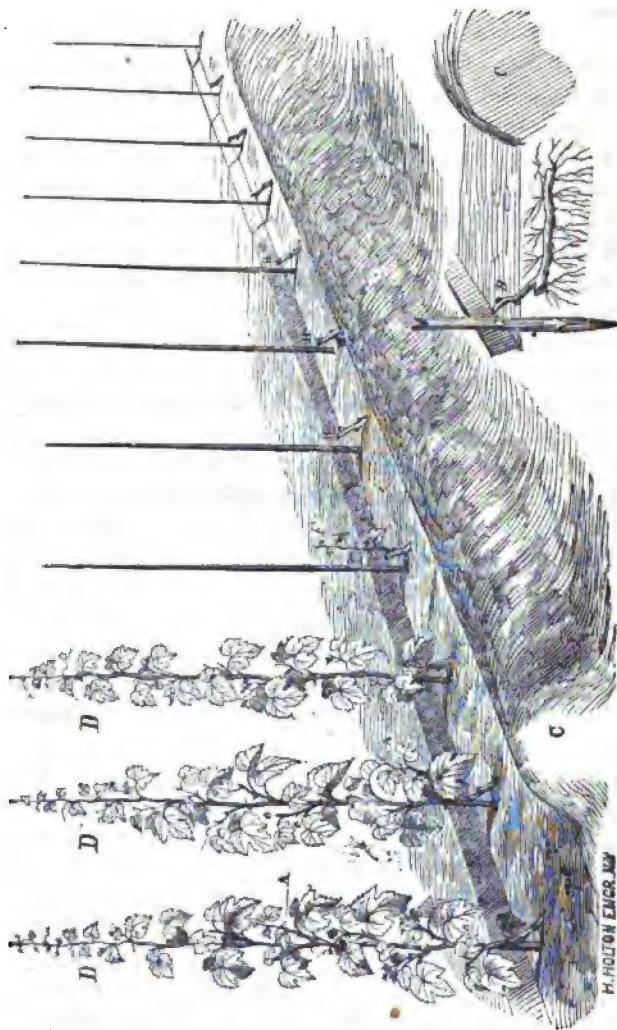


Fig. 1.

Fig. 2.

out of the trench, and laid up for the season. Fig. 2 shows a row of vines planted in this way. D, D, D, are vines that have made one season's growth; F is a vine just beginning to grow, two of the shoots having been rubbed off; B, B, B, are vines pruned back to three eyes, but not yet started; C is the earth from the trench. Now this trench is not made immediately by the side of the trellis, but some five or six feet from it, and a portion of the vine laid down each year until the trellis is reached. If all the vine were laid down at once, it might not be uniformly furnished with roots for its whole length. This repeated layering, and its supposed advantages, we shall explain and discuss hereafter.

Having fixed upon the distance at which the vine shall be planted in the rows, it remains to determine the distance of the rows from each other. This point, again, must be determined by the height of the trellis, which we think should in no case exceed six feet. It may be laid down as a general rule, that the width of the rows and the height of the trellis should be so regulated that the sun, in the month of September, shall freely strike the earth at the bottom of the vines. This will be found to secure the genial warmth of the sun and a free circulation of air, indispensable to the early and proper ripening of both wood and fruit. It matters but little how hot the air may be, provided the air be in motion. Sudden changes and cold currents the vineyardist should look upon with dread. With the rule above laid down, we think each one can determine for himself the distance at which the rows of his vineyard should be placed.

LANDSCAPE ADORNMENT.—No. 18. ROADS.

BY GEORGE E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

AN ornamental road in any style of landscape embellishment is essentially a work of art, and should, under all conditions, express art in its design and construction. The dignity of a private place depends, in a great degree, upon the marked differences that should exist between its drives and the public highway; and although we should like to see the latter of a high standard, yet there is a degree of finish, keeping, and taste not requisite to its practical perfection. In the appointments of a well-kept estate, the roadways are quite important features; and considerations of tasteful as well as practical value suggest artistic design and location, and skillful construction and finish. In using the curved line in locating a road over natural grounds, we do not deny the character of art exhibited in the straight line, but consider its most appropriate place to be on those grounds treated in an artificial manner; nor do we propose to discard its use entirely in any school of landscape embellishment. It is of value in blending natural scenery with the architectural lines of the house, in uniting abrupt curves, and in such situations as the curved line would appear meaningless. The general use of the curved line in natural landscape treatment is the most appropriate, and by far the

most beautiful and graceful of all lines. It possesses, in a greater degree, the three qualifications of utility, economy, and ornament, and has no arbitrary conditions in its location. Two points decide at once the entire position of a straight line, while a curved line may pass through an infinitude of points, and be adapted to all positions necessary to display attractions or avoid objections.

Infinite beauty in a curved line suggests the use of natural curves; the theory of motion points them out, and every natural example of the beautiful combines them. The most graceful and elegant forms of the material world are described or bounded by curved lines; there is no higher form of beauty than that expressed by them, and the effect is lessened by using lines of a different character. This is fully illustrated in nature; and from nature is elaborated the two forms of natural landscape adornment, the beautiful and the picturesque.

From this argument we propose to draw two conclusions, the first of which is, that natural curves, or, in plainer English, mathematical curves, are those only embraced in the field of absolute beauty; and the second is, the extraordinary facility with which they can be laid out, a certain, positive, truthful beauty at the minimum of expense. Every ordinary practitioner has some sort of a plan of his own, but so wonderfully gifted (?) is he with the art of landscape gardening, "that you might as well ask for a receipt to become a poet" as to expect him to impart the manner by which he finds a result. If he will work under inspection, his deficiencies can be easily recognized; his natural gift is ignorance, and its natural effect is costly.

The system, or rather no system at all, of laying out curves by the eye only, is the resort of the experimental tyro, and to those who care only for practical results, and nothing for cost, they will answer every purpose; but to produce a line of grace and beauty that is perfect in these requisites, that can be expeditiously done, requiring the least amount of time, and the most economy of means, something besides guess work, experiments, and opinions, must be adopted.

The ordinary gardener, in laying out a road, is not satisfied until he has apparently reached a mathematical curve. From every point of observation, forward and backward, he ranges his stakes in search of a true curve, and, finally, with repeated changes, he hesitatingly accepts a line that he thinks will do, and to which he returns again and again with a fresh eye to reconsider, as if a lingering doubt existed of some inaccuracies. An accomplished expert may use this plan successfully on level ground, but on uneven or undulating surfaces the eye can not be trusted. Thus a perfectly straight line drawn diagonally across a valley, appears to be curved, and a true circular curve laid over a broken surface, apparently partakes of its nature. Optical delusions are every-day matters, and the eye differs in flat, rolling, hilly, and mountainous scenery. Shadows, foreshortened surfaces, and the well-known different effect between looking up or looking down a slope or hill-side, invariably deceive all. In thickets, or where the view is obstructed by old buildings, fences, &c., the manner of guessing out curves by the eye is of no value;

it is but a home-made plan. "To have a character of art," says Mr. Loudon, "each separate curve ought to proceed, from its commencement to its termination, in a uniform, uninterrupted degree of curvature."

All authors on landscape gardening are unanimous in their recommendations of curves of a strictly mathematical character. Downing especially makes some forcible suggestions in regard to them. Hogarth's line of grace and beauty was strictly geometrical; while Ruskin traces in the trees, clouds, undulations of surface, and in all natural objects an endless variety and combination of geometrical curves.

Ornamental road-building is an example of tasteful landscape engineering; the highest form of art, grace, and utility are dependent upon its skillful application; a finished polish and neatness characterizes its development, and it affords in all its combinations of beauty, utility, and economy, an absolute knowledge of the result. Scientific road-building is the true principle of economy; it shows the minimum amount of earth-work, the easiest and simplest manner of construction, and illustrates, in advance, the position, the grade, and the expense.

[One of our correspondents has expressed a purpose to criticise Mr. Woodward's remarks on geometrical curves. There can be no objection to this; let him therefore go ahead. He can have no difficulty in understanding Mr. Woodward's preferences, for they are decided, and pointedly expressed.—ED.]

B E N D A V I S A P P L E .

BY J. S. DOWNER, ELKTON, KY.

As the apple Ben Davis continues to attract the attention of some of our Western fruit growers, and as I furnished Mr. Downing with the outline and description of this fruit, afterward published in his revised work on Fruits, I feel called upon to give what information I have relative to its origin.

About 56 years since a gentleman, whose name was Ben Davis, made a settlement in this place, (then Logan Co., Ky.) Where he came from I have not yet been able to learn certainly, as he did not remain a great while here, but it is generally supposed that he came from Virginia to this place. His fruits did not attract any notice, that I can learn of, while he remained here; neither is it known by what name, if any, his apple, now, and for the space of 40 years past, known here as the Ben Davis, was by him designated. Nor does any one now know whether he raised it from seed or brought a sucker from some old seedling tree with him when he came to this country. It is evident, however, that the original tree here was not a graft, as it was propagated many years, perhaps 25, exclusively from the suckers, and in no instance that I have heard of, has failed to produce the original variety. This apple has not been known here by any other name than Ben Davis.

The name New York Pippin is objectionable, if for no other reason, on account of its being applied to too many distinct varieties of apples here now. I have no less than some four or five sorts under this name.

[We are obliged to Mr. Downer for this history of the Ben Davis Apple. Mr. D. does not seem to doubt that the Ben Davis and New York Pippin are identical, but considers the latter name objectionable on account of its being applied to other apples, and this of itself is an objection. This matter, we believe, was referred to the Committee on Synonyms of the American Pomological Society. Any further information relating to the subject would be acceptable.—ED.]

THE CHINESE CHRYSANTHEMUM.

BY AN AMATEUR.

MR. EDITOR,—One of the greatest secrets in gardening is, to do the right thing at the right time. And it is because they now require attention, that I send you at this season some remarks upon the cultivation of a class of plants which have of late years taken an enormous stride in the estimation of our floricultural friends of the old world. And most deservedly so; for they may be (and are *there*) made to decorate the plant-houses for more than two months in the winter season, when flowers are by many the most valued.

Those who have only seen Chrysanthemums as they are grown out of doors, can form no more idea of their beauty, with proper culture, as pot plants, under glass, than one could obtain of a Newtown Pippin from a crab-apple. The bloom of the large varieties may be grown four or five inches in diameter, and many of them are of most exquisite form. As to color, they may be had of almost any shade that is desired, except perfect blue or black.

The large varieties, when well grown, are undoubtedly the most beautiful. But the pompon or dwarf sorts, which are of comparatively recent introduction, are with many persons the greatest favorites, from the circumstance of their more compact growth, and their not taking up so much room.

There are many ways in which this family of plants may be grown with a satisfactory result, some involving more care and expense than others, the best of which I will describe.

The first thing is propagation; and March and April are the best months to begin, if very large specimens are desired; but May and June are early enough to obtain good handsome plants before the blooming time in November.

Take, then, suckers from last year's plants, which in March and April will make their appearance above the surface of the soil, and put each in a three or four-inch pot; or they may be planted out in a garden frame, or under a glass hand light, a few inches apart. They will probably have some roots when taken from the old

plant ; but whether or not, they will soon strike root, without the aid of artificial heat. In three or four weeks, when the point of each is seen to grow, cut or pinch off the top, at three or four inches above the surface of the soil. In a few days, a shoot will be observed to come out from the axil of most, if not all the leaves, below where the plants were cut or "stopped," as it is termed by gardeners. As soon as these shoots are distinctly seen, (but not before,) place the plants at once in the pots in which they are to bloom. The size of these pots may depend on the use to which they are to be applied when in bloom, such as decorating rooms, &c. ; but to grow them in the greatest perfection, the large or tall growing varieties require a pot eleven inches in diameter, and the pompon, one seven or eight.

The compost in which to grow them is the next point. Two thirds good loam and one third well decayed manure, mixed together, and used in the rough state, without being sifted, will suit them admirably. More manure would encourage leaf development too much.

Place one plant in the center of each pot ; and when potted, keep them in a garden frame until night frosts are over. Immediately after that, place them out of doors, in an open situation ; but plunge the pots, or cover them with sawdust, hay, or some material to keep the sun from the sides of the pots. Place the pots three feet apart every way ; the plants must have ample room to grow, and as they are to remain in the same situation until just in bloom, it saves trouble to give them room enough at first. Cinders or boards, to keep out worms, should be under the pots ; and the pots should be lifted up once a week or ten days, to prevent the plants from rooting down into the ground, unless boards are underneath.

Water must be liberally supplied, morning and evening, to the plants in dry weather, both to the pots, and through a rose or syringe overhead. They should never be allowed to flag for want of water ; but if they should happen to be neglected, a good watering will restore them to health and vigor ; although, if that happens often, they certainly suffer materially.

As soon as the shoots that were seen to be growing when potted are three or four inches long, they should again be stopped, or have the point pinched off from each shoot. This stopping should take place not later than the end of July ; and after this they will not require any more stopping or cutting, but the shoots that will thenceforth be made will all remain to bloom.

As these shoots grow, they should be tied out and spread, so as to admit air freely to all parts of the plant. This process requires attention from time to time.

About the middle of August, and from that time forward while the bloom buds are forming and growing, manure water may be given to the plants every third day with advantage. This may be made by stirring up a couple of spadefuls of old manure in five or six gallons of water, and letting it stand until clear.

Towards the middle of October, the buds will appear in large clusters. To have fine bloom, these should be thinned, leaving only one bud on each shoot. Their

size is by this means much increased ; and from the number of shoots the display of bloom will be magnificent.

As soon as there are symptoms of approaching frost at night, the plants should be removed to a greenhouse, or to an empty room without fire, so that the bloom may expand gradually ; keeping the plants, if in a room, as near as possible to the window, that they may have all the light possible. Watering must be attended to, but not over the foliage after the buds begin to expand.

Supposing the plants to have been raised from cuttings late in May or in June, the course of cultivation will be the same, except that they must not be stopped more than once, (about the middle or end of July,) and of course they will not be such large plants, and will not require such large pots.

The above is perhaps the best method of growth for general purposes ; but assuming the amateur to be an enthusiastic florist, anxious to show the extent of his skill, very much larger blooms may be obtained of the tall growing varieties, to exhibit as cut flowers, by a system that I will now explain. But the plants themselves will not exhibit that luxuriance of habit, clothed with foliage when in bloom down to the pot, as they will by the way above detailed ; that is, provided they have been well attended to, as to the supply of water ; for if at any time that has been allowed to fail, the lower part of the foliage is sure to fall, or rather wither.

To grow the largest size blooms, take suckers in April, and plant four in a four or five-inch pot, place them in a frame or under a hand glass, and shade the first week if the sun is strong. As soon as the pot is full of roots, in a month or so, transplant without breaking the ball, and *without* stopping the plants, into an eleven-inch pot. Treat the plants exactly as before directed, except that they are to be allowed to run up as tall as they please ; but pinch off all laterals or side shoots, leaving nothing but the main stem and the leaves upon it.

When the time arrives for the formation of flower buds, pinch off the first bud that appears, and then the top of the stem will divide into three heads, with several buds on each. Take off all the buds but one on each division, leaving, therefore, three buds on each plant ; and as there were four plants originally to each pot, that will give twelve blooms. Provided due attention be given to watering, and that manure water is given, as above directed, after July, but not earlier, these twelve blooms will look more like Dahlias than like ordinary Chrysanthemums.

On this system, suckers will sometimes come up in the pot before the bloom is expanded ; if so, take them out by cutting them at or just below the surface of the soil, so as to keep all the energies of the plants concentrated in the growing buds.

There is another mode by which good bloom in pots may be obtained, with much less trouble. But with true florists, "trouble" is a word not known to their dictionary !

If the plants, when propagated in spring, are planted out in a piece of good garden ground, three feet apart, and then stopped once, at the end of June or in July, and are duly supplied with water, they may be removed into pots in September,

being carefully taken up, with good balls of earth. They should immediately be placed in the shade, out of doors, and kept there a week or ten days, well watered daily. After that, place them where they can get the morning or the afternoon sun for two or three hours; and when frost threatens, take them in-doors to bloom. In this way, even, they will afford much satisfaction.

After bloom is over, cut down the stems, and keep the pots through winter, (without water,) in a dry cellar or barn, cool, but free from frost, nearly if not quite. Many sorts will live in the open ground all winter; but some will not usually. In March, look to them, and give water, or shake out the ball of earth and commence the year's propagation.

[We will just add, that it is worth all the trouble to raise the Chrysanthemum in the manner so clearly described by Amateur.—ED.]

AMERICAN SHADE TREES.—No. III.

BY C. N. BEMENT.

It is gratifying to see the increasing interest taken in the cultivation of trees, for it indicates the advancement of civilization and refinement. But there is yet a large class so wanting in good taste that they consider the planting and cultivation of trees a very useless employment. To this class we would say, that happiness is the aim and object of all the labor of man. In proportion as mankind advance they seek for more extended and more intellectual sources of happiness. One of these is the planting and cultivation of trees. It not only gives pleasure to the senses, but teaches us a moral to the heart. Would our happiness have been as great without these beautiful objects of nature?

Much more might be said on the subject and character of tree-culture, but we have already occupied more space on this subject than perhaps we are entitled to. We do not expect that any thing we may say on this subject, at the present time, will awaken those who have grown gray in their indifference to the productions of our woodlands; but we do hope to stir up the young, whose habits of thought and action are not yet formed, and who have not become wholly possessed with the one idea—that of money making—which blights and destroys all the finer and better feelings and tastes. They have more leisure than their fathers had; education is more general; science and taste are both uniting with labor in all parts of the world, so that working men will not be mere machines, performing their day's labor as an ox or a horse. “The cultivation of the soil” is no longer the farmer's motto, but the “cultivation of the soil and the mind”—the *mind* above all.

It is not our purpose, in this article, to offer a select list, but to make some further remarks on a few of our native trees and shrubs worthy of cultivation, which we have omitted in our former articles.

The Flowering Dogwood is the most showy and beautiful of its genus. The flowers are very numerous, and when they are expanded in May, this tree, which is a very common undergrowth in woods composed of deciduous trees, is conspicuous at a great distance, showing through the woods like a flower among the green, delicate foliage, sometimes in such profusion, as at a distance to resemble a snow-bank.

Among the eight species of Dogwood which have been observed in this country, the White Flowering is the most beautiful, and is entitled by its size to be classed with the forest trees. It is a roundish-headed tree, usually twelve or fifteen feet high, but often rising from twenty-five to thirty feet, with a diameter of nine or ten inches. In the United States at large it is known by the name of Dogwood, and in Connecticut it is called box-wood, probably from its close, fine grain, resembling the wood of that name, much used by engravers, musical instrument makers, &c.

The Flowering Dogwood is of slow growth, and the wood is hard, heavy, and solid, of a fine, close texture, and susceptible of a fine polish. The seeds, of a vivid, glossy red, and of an oval shape, are always united. They remain upon the tree till the first frosts, when, notwithstanding their bitterness, they are devoured by the robin, which at this period arrives from the northern regions, on its migration to warmer climes.

The Flowering Dogwood should find a place on every lawn or pleasure ground of any considerable extent.

The Liquidamber, or Sweet Gum, is a beautiful tree, not unlike some of our Maples in the leaf, star-like, which retains its clear, dark, glossy foliage through the burning heat of midsummer; but it is in the autumn that the most glorious effects are visible; then it is dressed in a livery of brilliant tints, ranging from vivid orange to deep purple-red. It requires a rather moist soil, is easily transplanted, and requires little or no care afterward; its habit is open and straggling; the bark on the body and limbs has a corky appearance, not unlike that of the cork-oak. We have noticed it growing on the high grounds, north side of Staten Island, near New Brighton. It is one of our beautiful native trees, and is not half as well appreciated, as an ornamental tree, as it should be. It would add to the beauty of our pleasure grounds.

The Buffalo Tree, or Silver-leaved Shepherdia, is a very beautiful tree. It is a native of the Rocky Mountains, and named after the late W. Shepherd. It was also discovered by Mr. Nuttall in Missouri. The tree is deciduous, of hardy, upright growth, and thorny; leaves small, and of a delicate and silvery appearance. The fertile and barren flowers are produced on different trees. They should be set in pairs—one staminate, the other pistillate—from six to eight feet apart, which will allow them to grow to twelve or fifteen feet in height. The two kinds can be distinguished by the leaf or bud; the pistillate having a long, slender leaf, while the staminate has a shorter leaf, approaching near the

oval form. The form of the buds corresponds with that of the leaves. This is ornamental as a plant, and the fruit consists of berries about the size of large currants, of a fine scarlet color, and very beautiful, enveloping the branches in profuse clusters. It has an acid taste, and is considered valuable for making into tarts and preserves.

The Judas Tree.—This is a beautiful genus of ornamental trees, flowering early in spring, and looking very pretty planted singly on a lawn, or trained to a wall or trellis; it is not a large tree, seldom reaching higher than twenty-five or thirty feet.

The species found in the United States is the *Cercis Canadensis* of botanists, commonly called Red Bud. It is found sparsely scattered in sheltered valleys in all parts of the country, from Maine to Georgia, though it abounds most on the banks of the Ohio. In the Middle States, it is a small tree, sixteen or twenty feet high, greatly admired from being covered with bunches of small flowers, of a rose color, in April, before the leaves begin to appear. They give a brilliant appearance to the whole tree, except the extremities of their branches. The leaves are exceedingly neat and pleasant to the eye, being of medium size, heart-shaped, dark green above and silvery underneath, and looking as if they had just been washed by a shower. The flowers are small, shaped like the pea blossom, and are of a deep purple-rose color. They grow in clusters, completely covering the branches, and are conspicuous from quite a distance; hence the name of Red Bud.

The rosy blossoms of this tree, combined with the white Dogwood and the scarlet of the Maple, form an agreeable sight in spring. The flowers are succeeded in summer by brown seed-pods, six or eight inches long, which hang on the trees throughout the winter.

This tree grows rapidly enough anywhere, but succeeds best in a cool, moist, and half shady situation. Insects do not infest it, nor does our coldest winter harm it. We recommend it as one of the finest ornamental trees, of medium size, and should find a place in every pleasure ground or lawn.

The Swamp Pyrus, or June Berry, is a small tree, found in low grounds, and blooming in early May. When in flower, it possesses considerable beauty, and produces in June a small pear-shaped fruit, of a sweet and pleasant taste, and is improved by cultivation. The June Berry belongs to the apple family of trees and shrubs, to which it is so nearly allied that scions of the pear inserted into the stock of this shrub will grow and bear fruit. The June Berry, with its sweet flavor, is a favorite with birds, and they generally appropriate all of it to their own use some time before it is fully ripe. It is easily cultivated on any common soil, and would add much to adorn the park or lawn.

The Hop Tree is more of a shrub than a tree, as in its wild state it seldom grows above the height of ten feet. It is a native of the Middle States, and flourishes well on almost all kinds of soil, even in a partial shade. It is a pretty

ornamental tree. The seed grows in clusters or panicles, and present a beautiful appearance. The flowers not only resemble those of the hop, but have the same bitter flavor. We have them in great perfection on the grounds at Springside.

The Moose Wood is a beautiful, small tree, and found in abundance on the high and rocky land adjoining the Magnolia Swamps, in Gloucester, Massachusetts. "It is distinguished," says Mr. Emerson, "for its striped bark, beauty of its opening buds in spring, its large, handsome leaves and pendant fruit, and is of the easiest cultivation in any good soil."

Franklinii. This species of *Gordonia* appears to be restricted by nature within very narrow bounds, "Having hitherto," says Michaux, "been found only on the banks of the Altamaha, in the State of Georgia." It was first discovered there by John Bartram in 1770, who gave it its specific name. In height it rarely exceeds thirty feet, with a diameter of six or seven inches. It blooms in Carolina about the beginning of July, and a month later near Philadelphia. The flowers are more than an inch in diameter, white, and of an agreeable odor. They have a slight resemblance to those of the Dogwood. Like those of the Loblolly Bay, they open in succession during two or three months, and begin to appear when the tree is only three or four feet high. The fruit is in the form of round, ligneous capsules, which, when ripe, open at the summit in four seams to release the small angular seeds.

Although the *Franklinii* is found two or three degrees further south than the Loblolly Bay, it appears to be far less sensible to cold, and stands the climate well near Philadelphia, and will perhaps resist the winters higher north.

GOSSIP ABOUT FRUIT TREES AND FRUIT.

BY AN OLD COUNTRYMAN.

THERE is no doubt that the age of some fruit trees has much influence on the flavor of the fruit. This fact is quite in accordance with what might be assumed would be the case, judging from the laws of vegetable physiology; inasmuch as many of the secretions of plants are known to vary considerably, both in flavor and consistence, with the age of the plant.

In floriculture, even, the shape and colors of flowers are often found to alter to a certain extent, after the plants have attained some age, from those which they possessed as seedlings. Care, therefore, should be taken not to reject too hastily newly introduced varieties of fruits, whether imported kinds, or such as may be originated by those who are engaged in the interesting and praiseworthy occupation of endeavoring to add to the Pomological riches of their country.

Many years since, the writer had in his garden in England, a very old Green Gage plum tree, some fifteen or twenty feet in height, and, probably, eight or ten inches in diameter near the ground. It had but a moderate sized, straggling top

of branches, but it bore fruit of remarkably fine quality. The plums were, however, very small, and but for their high flavor, would have been little valued.

This tree chanced to throw out a vigorous young shoot from the old stem, (which was perfectly sound and in good health,) and the idea presented itself, that it might be possible to add to the size of the fruit, by removing the top of the tree, and renewing it from this young branch. The stem of the tree was, therefore, cut through just above it in a slanting direction, and the whole strength of the roots being thereby thrown into the young branch, (then in the second year of its growth,) it made rapid progress; and in two years from that time, it commenced bearing, and well repaid the experiment; the size of the fruit was more than doubled, and the flavor retained all the excellence for which the tree had long been remarkable.

Some varieties of pears (upon their own roots) undoubtedly present the same phenomena. A tree of an old and highly esteemed pear in England, that was comparatively young, always bore fruit of very large size and shape, but of a mealy flavor; while an old tree of the same kind, similarly circumstanced as regards soil and situation, produced invariably fruit of high quality; evidently consequent only on the difference of age in the two trees: but the size of fruit was much in favor of the younger tree.

The renovation of old fruit trees deserves, also, more attention than it often receives. So long as a sufficient portion of the trunk remains sound, there are few old trees that can not be rendered valuable. If the variety be not really good, of course, it is worse than useless to retain it, and the tree must, therefore, either be cut down, or, if sound, grafted.

The causes of deterioration of old trees that are sound, but cease to bear, or that yield imperfect fruit, will generally be found to arise either from poverty of the soil, (its good qualities having been appropriated by the tree in bygone years,) or in the fact that the roots have penetrated too deeply into the subsoil. These evils may be remedied, by digging a trench round the tree at a distance from the trunk, at least equal to the spread of the branches; from this trench, and *between* the larger roots found near the surface, an approach may be made nearer towards the trunk of the tree, so as to cut through many of the roots that may be seen to grow downwards into the subsoil; and after that, the earth removed may be replaced, with a rich compost of fresh loam, and a little manure mixed with it.

An instance of the accidental restoration of a large pear tree, that had for many years been neglected, and which was supposed by the owner to be valueless, will illustrate the simple means by which such an operation may sometimes be effected. The tree was very old, and happened to stand within about ten yards of the back entrance to a large garden, which had formerly been kept in high order, but for many years subsequently had been but poorly cultivated.

In the fall of the year, a large quantity of old manure was purchased, for the purpose of improving the ground for vegetables. This manure was heaped up

against and around the old pear tree some three or four feet high, simply because the place was convenient to the back entrance gate, and was, moreover, pretty much out of sight from the rest of the garden. The manure remained there through the winter, and in the spring was used up as required in the garden. In the following autumn, the tree (an old Bergamot pear) bore a very heavy crop of fruit, remarkable both for size and flavor. And thenceforth it continued (and possibly may yet continue) to yield a good annual crop. Of course, no one at all conversant with the subject, would recommend piling up manure against the stem of a tree. In this instance, it was done unwittingly by the men, and was again removed before it did harm; and, undoubtedly, without any intention of the tree being affected by it for good or ill.

The best method of keeping fruit in winter, is a subject on which the experience of fruit-growers, who are readers of the *HORTICULTURIST*, would be acceptable. Some six or seven years ago, a gentleman of the name of Curtis, at Boston, was making experiments, which were said to promise well, and which he was to communicate to the Massachusetts Horticultural Society. Who knows what came of them?

Is there any better system of keeping apples and pears for use in the spring, than the old-fashioned one of enveloping each in paper in November, and stowing them away in boxes kept in a cool dry place, free from frost? Fifty years ago, that was the way they were kept in the old country (at least the choice table fruit) with success; but the trouble attending it where the quantity is considerable, precluded the adoption of the plan, except to a limited extent.

What is wanted, is a good system "for the million," as the saying is, in these go-ahead days. But that system does not seem to be yet forthcoming. Fruit rooms are expensive things "for the million," and even the right principles for constructing these, where expense is no obstacle, are not by any means reduced to such a state of accuracy as to lead to quite satisfactory results in the majority of cases.

In treating, or rather digesting the subject, it should be borne in mind, that the separation of the fruit from the tree does not destroy its vitality. It must not be regarded as a dead branch. It has no longer the power of growth or enlargement; but many of the meteorological influences which affected an apple or pear while hanging on the tree, will, in a modified degree, produce changes in them of a similar or analogous character for a greater or less time after they are gathered. These changes may be, and are, we know from experience, capable of being, within certain limits, hastened or modified by circumstances, as the temperature, moisture, dryness, and some other conditions of the atmosphere, by which they are surrounded.

This we all know; and, therefore, the question is, how to regulate these conditions to the best advantage with reference to the object in view, having regard to the fact that the vital agency is still operative; (which admits of demon-

stration as to some of the vital powers;) and it would seem, therefore, that success can only be attained by having due regard to that circumstance, whatever be the plan under experiment.

[The method of Mr. Curtis was, we believe, reported to the Massachusetts Horticultural Society, which awarded him a medal; but the mode itself has never been laid before the public that we are aware of.—Ed.]

THE STRAWBERRY,

BY A. S. FULLER, BROOKLYN, L. I.

In all our exertions toward improving the Strawberry, we should aim to produce a plant combining as many good qualities as possible. In most, if not all, of the best now in cultivation, we find but few of the excellences that go toward making up a superior variety.

1. *Quality* should be a prominent feature; and we do not mean by quality, a berry that is simply sweet or sour, but one that contains that peculiar richness which is only to be found in a variety that possesses an abundance of acidulous and saccharine matter, along with that peculiar property which gives to this fruit that delightful aroma so much admired in the wild strawberry of this country. Some varieties that are called good, are almost entirely destitute of those rich qualities that we find in Burr's New Pine, Hooker, and some others.

2. *Productiveness*.—When we have produced a variety that is satisfactory as to quality, the next question that arises is, Is it productive? for if not, then the small amount produced would exclude it from the list for general cultivation. On the other hand, a variety may be very productive, and yet so very inferior that quantity will not compensate for the loss of quality.

3. *Size* is one of those requisites that should not be overlooked in these progressive times, for a small berry, although very good, is not only troublesome to gather, but is unattractive, and consequently of not so ready sale, when that is an object in cultivation. Nor is the apparent size of the berry always to be taken as correct, for many of the celebrated large varieties are either hollow, or have a pithy, tasteless core, and contain really no more substance than a berry of smaller size.

4. *Color*.—The best color for a strawberry is the one most attractive to the eye; and as different eyes are attracted by different colors, it becomes a very difficult task to determine which is the best. But whatever the color, it should be bright and permanent, for we have always observed that those varieties that have a dull color will look stale and decayed after being picked, long before they are so in reality.

5. The *Calyx*.—When a variety is to be grown for a market where it has been customary to pick off the calyx or hulls, as they are generally called, it becomes

indispensable that we have varieties the calyx of which parts from the berry easily. In some, the calyx adheres so firmly to the berry that they are entirely worthless for general cultivation, and would be so even if they possessed all the other requisite qualities of a first class berry.

6. *Firmness.*—A solid berry, one that will bear transportation without injury, is another important consideration, when selecting a variety for market purposes; in fact, we think a soft berry, like McAvoy's Superior, should not be tolerated on any account, as we sometimes wish to send a friend a basket of strawberries, and if they reach that friend in a damaged condition, it is not only mortifying to the donor, but a disappointment to the recipient. Besides, we have plenty of varieties that are firm and solid, and equally as good in other respects as those that are delicate.

7. *Growth of the vines* should also be noticed in making selections; for if the plant is a poor, feeble grower, it is as great a fault as a poor producer. Some varieties will grow luxuriantly upon very poor soil, while others grow poorly upon the best soil and under the best of cultivation. Over luxuriance in foliage, without a corresponding productiveness, such as we see in the Peabody, is certainly to be avoided; yet a variety that has a delicate foliage can not be expected to give a large quantity or fine quality of fruit. The Wilson may be considered a variety with both luxuriant growth and great productiveness combined in an eminent degree.

8. The *Fruit-stalks* should be long, and sufficiently strong to elevate the fruit above the ground, so that it be clean and easily gathered.

9. *Hardiness.*—This is the foundation upon which we must build our structure; for if a plant is not hardy, then all other merits fail. By hardness we do not mean a plant that will withstand the cold alone, but one that will withstand the heat of summer, drought, changes from heat to cold, and, further, one that will adapt itself somewhat to the different soils in which it may be planted; for it is not always convenient or practicable to have a particular soil ready for each and every variety of fruit. For instance, some of the European varieties suffer much from the cold of our winters, while others suffer most from the heat of summer. Most American varieties seem to be capable of enduring the heat of summer, but some of them are quite tender in winter.

The past winter has been quite severe upon many kinds, and early in the season we made some notes upon the condition of many varieties we have in cultivation, a few of which we append, as it will show the effects of the cold upon the different varieties unprotected and cultivated in the same garden.

Wilson, Bartlett, Scarlet Magnate, Chorlton's Prolific, Downer, Oscar: foliage green and uninjured.

Boyden's Mammoth: leaves entirely killed, but crowns good. This is now fruiting finely.

Jenny Lind: leaves brown, plants slightly damaged.

Queen Victoria, (new :) all dead but one or two plants. Planted one year, and were large and fine last fall.

Hooker: about one half dead, and those remaining so much injured that they will give no fruit. The bed has been two years planted, and the plants were healthy last fall.

Reine Hortense: leaves slightly injured, but crowns good.

Delices d'Automne and Vicomtesse de Hericart de Théury, stood the winter very well; occasionally a plant killed.

Triomphe de Gand, leaves partially killed, but the plants seem to be uninjured; may be considered quite hardy.

Wizard of the North, La Constante, May Queen, Wonderful, Bont St. Julien, Duc de Malakoff, West Chester, and several other varieties, were slightly protected; we can not, therefore, decide upon their hardiness. They were all uninjured, while some other varieties in the same manner were considerably damaged.

We might extend these notes, were it necessary; but from the few we have given, a comparison can be made upon the hardiness of the varieties named.

[Mr. Fuller, we are glad to learn, proposes to follow up this subject, for which he has an abundance of material; and, moreover, he delights in it, and will no doubt do it up thoroughly. The past winter has been very trying, and the notes on the hardiness of varieties are interesting, and agree substantially with what we have observed in several localities in regard to many leading kinds.—ED.]

BROOKLYN HORTICULTURAL SOCIETY.

BY BROOKLYN.

I REGRET you were unable to attend the spring exhibition of the above. I was expecting you would have a word to say about it, and therefore deferred this article.

I noted at the time what struck me in connection with the affair, and beg to offer the following remarks:

First of all, "Time." Punctuality upon the part of exhibitors was much insisted upon in the programme; this was justly relaxed on account of the weather, which also was probably the reason the judges did not attend at the specified time; but the room was not in a proper state to begin the reception until after the time appointed for closing it.

The secretary had too much upon his hands at the receiving and arranging. He should be assisted by one or two of the active members, who should also arrange among themselves so that one of their number, distinguished by badge, be always upon the floor throughout the exhibition.

Artificial flowers I think inadmissible and objectionable; preserved natural

ones, collections of Algae, Herbariums, Leaf cases, &c., I should judge desirable additions.

Music I consider rather an unnecessary outside attraction; but if it is introduced, it should be in the afternoon as well as at night, so that the children, and those living outside, might have the benefit of it. Gaslight is not the proper time to view flowers, and no extra inducement should be offered then.

The mode of arranging cut flowers I think open to improvement. It made me shiver to see the beautiful Pansies caged, in their naked loveliness, by an iron grating; there should be two or three leaves to each, and should be set by means of light spring-steel nippers, so that their velvet be not soiled with wet sand by clumsy fingers. A head of Cabbage is a pleasing sight to me in its proper place; but I do not think the Drumhead and Sugar-loaf forms so elegant, that they are the only worthy models for Nosegays; (beg pardon, Bouquets!) at any rate, to make a good imitation, there should be more *greens*.

Druggists' glass jars are not the most sightly flower holders: opaque vases would be better. Think loose flowers, with plenty of foliage, set in a basket or dish of sand, more natural and elegant than the present strait-jacket style; and any that fade can be easily removed.

A lady of my acquaintance thus gives vent to her feelings; don't know whether poetry is within rule:

Let Flowers be grouped in clusters few,
So that not one is lost to view,
And skillfully arranged to show
Their beauty and their contrast too.
The Lily placed beside the Rose:
This is more fair, that will disclose
A richer and a deeper hue.
The crimson Salvia or the blue
Beside the virgin Rose should bend,
Or with the white Clematis blend.
The gay Nasturtium is more bright
With blue Verbenas or the white.
And let the scarlet Cypress vine
Amid fair Sweet Alyssum shine;
The coral Honeysuckle glow
Through cluster Roses pure as snow.
Let Fuchsias droop o'er parian white:
Ne'er choose a vase of color bright,
Nor one o'erlaid with tinsel gold,
For Nature does her gems unfold
In emerald setting, and can ne'er
Need aught to make them still more fair.
Yet in the art of grouping these,
How few excel or even please!
Forgetting Nature's graceful ease,

They strip her flowers of leaf and stem,
Which add so much to charm in them,
And bind them stiffly, till they bear
Scarce likeness to the gems they were ;
But mingled both in form and shade,
A graceless pyramid is made,
That soon, as well it may, will fade.
Give me one Rose, some drooping grass,
And place them loosely in a glass
Of tall and slender shape ; or yet
Some sweet and modest Mignonnette,
With one Moss Rose-bud in the green,
That Nature gave it birth between,
And Woodbine fair, that will perfume
As well as they shall grace the room.
Where oft those lovely clusters may
E'en to a stranger's eye convey
A type of her who placed them there,
With so much grace and tender care.

Bright glazed green muslin I think not suitable for coverings and hangings to the tables ; should choose a dull maroon—*earth colored* serge.

The list of awards should be printed on slips as soon as possible after they are made, and freely distributed. No full and correct one has been published, to my knowledge.

The room is, of course, a vast improvement upon former ones, but is yet too small ; the people require space as well as the plants, and should have the privilege of lounging and looking in comfort, as long as they feel inclined.

The attention of gardeners should be called to the exhibitions two months beforehand, by advertisements in their publications ; and as these unfortunately reach but a small portion of them, also in the daily papers, and by circular.

Each working member should resolve himself into a visiting committee of one, and between this time and that of exhibition, personally solicit every grower he knows. Members and others, I think, should be impressed that *any* single healthy blooming plant is a desirable addition to the exhibition, and *worth sending*. Few now contribute unless they have rare ones, or can muster the number necessary to compete for a prize. When the date of exhibition arrived, as you tell me the "*Public*" is inevitable, I should endeavor to catch as many stray quarters as possible, by a thorough system of advertising—by newspapers, posters, handbills, flags on city cars, &c.

[We no doubt lost something in not being able to attend the last exhibition ; but we are glad to see that you have in a measure supplied our place. Your criticisms will be of use to the Brooklyn society, and to others also, being characterized as they are by candor and intelligence. Punctuality is a matter of the first

importance on the part of all concerned in getting up an exhibition. The weather will sometimes interfere in the case of exhibitors, but seldom affects the judges. We have sometimes been kept waiting, at great inconvenience, for five or six hours. The judges, seeing that they can not go to work for hours, often leave the room, and sometimes do not return again. A man who travels fifty or a hundred miles at his own expense for your convenience, has a right to expect that his time shall not be needlessly wasted. This subject of punctuality, we know well enough, has its troubles, but every thing possible ought to be done to insure it. The Brooklyn society, in this respect, is not more blameworthy than a great many others; the fault is a very general one. The secretary is usually an over-worked man at exhibitions; he might be greatly relieved in the manner you suggest. It would be a great help to him, too, if exhibitors were strictly required to present an exact list of their articles at the time of entering them. To suppose that any secretary can enter promptly each article as it comes in, is a monstrous absurdity. The reception and arrangement of articles should be intrusted to parties specially appointed for the purpose.—Artificial flowers must feel very queer in such company. Unless they are exact reproductions, and made for a special scientific purpose, it seems to us that they are somewhat out of place; though we expect to get our ears boxed for saying so. But the music, "Brooklyn." We have a soul for music as well as flowers, and it is one of the very few pleasant sounds *we* can hear. Then, too, there is a certain sympathy between music and flowers. When Æolus plays his harp, the leaves and flowers begin to dance. We think, on the whole, "Brooklyn," that it would be well to have the music both in the afternoon and the evening; but let it be *real* music, if you please.—Cabbage-head Bouquets! That is expressive. In our boyish days we were on a Flower Committee with the late Mr. Downing, and when the "Bouquets" were reached we took occasion to express our repugnance to the common method of packing and squeezing flowers into an unmeaning mass, and calling it a Bouquet. He agreed with us precisely, and there being some proper subjects before us, (which, indeed, almost suggested the discussion,) we gave the first prize (to the consternation of some of the exhibitors) to a pair of Bouquets loosely but very tastefully made up, so that the individuality of each leaf and flower was well preserved. We have seen no Bouquets since to equal them. We will send the HORTICULTURIST for a year to the person who shall present the best pair of hand Bouquets in *that* style at the next Brooklyn exhibition.—The poetry of your lady friend is not bad, and the sense is excellent.—The druggists' jars and the glaze on the muslin might both be removed with advantage. Where leaves and flowers are exhibited together, green is not the best ground; but for flowers alone it does very well, provided it is a proper green.—You are right about the awards and the room, and especially in regard to the advertisements. In our experience with exhibitions, we have found money spent in advertising well and wisely spent.—Your "committee of one" would be a very useful and effective one. It is the

individual action of members that gives force to the whole.—Though not addressed directly to them, but rather to Brooklyn, our Fairfield friends, who desire our comfort, will please apply these remarks unto their own hearts and circumstances, and profit as much as possible by them.—Ed.]

NEW PEARS, WITH DESCRIPTIONS.

BY J. C. HANCHETT, SYRACUSE, N. Y.

MR. EDITOR,—I send you descriptions of a few pears not generally known, which have been tested within the last two or three years at the Syracuse nurseries. I believe none of them have heretofore been noticed in your pages; but if I am wrong in this impression, it may still be not uninteresting to your readers to see how they appear to another observer, or prove themselves in another locality; for it is only by examinations at different seasons, in different localities, under different circumstances, and by persons differing in tastes and susceptibilities, that the qualities of a fruit can be determined, and its character established. I think I need not apologize, therefore, if in either of the descriptions which follow I should be introducing your readers to a former acquaintance.

1. MADAM ELIZA.

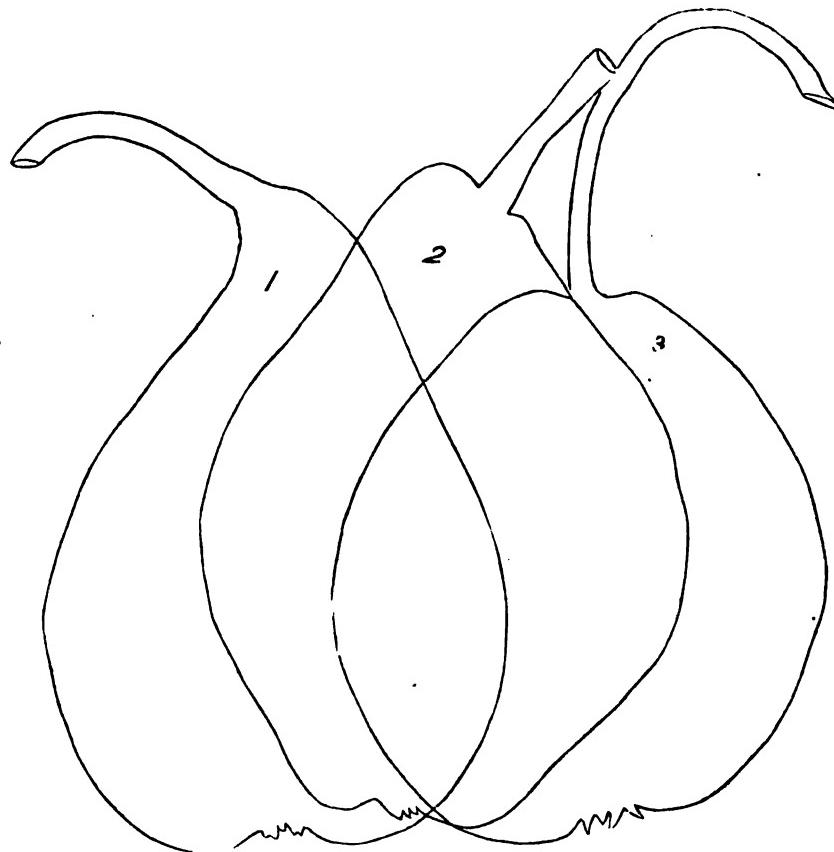
Fruit, large, long-pyriform, irregular. *Skin*, greenish yellow. *Stem*, about one inch long, curved, and lost imperceptibly in a fleshy protuberance. *Calyx*, closed, in a narrow basin. *Flesh*, white, fine grained, buttery, melting, sweet, abounding in an agreeable acidulous juice, and delicately flavored with bergamot. The fruit is quite uniform in appearance, and will prove a decided favorite. *Tree*, a fine grower on pear, short and stunted on quince, bears well. *Season*, last of October.

2. BEURRE COLOMA.

Fruit, large, broadest in the center, with a long taper in each direction, it being apparently of little consequence to it in which end the stem is inserted. *Skin*, yellowish green, with a bronze tinge on one side. *Stem*, scarcely one inch long, somewhat obliquely inserted, without depression. *Calyx*, small, closed, placed in a very narrow, shallow, corrugated basin. *Flesh*, white, rather fine grained, juicy, pleasantly acidulous, reasonably sweet, and without flavor; the consumption of it yielding a sense of passive enjoyment, with no nonsense about it. *Tree*, a good grower on pear or quince, but prone to blight. *Season*, last of October.

3. HAMON.

Fruit, large medium, obovate, broadest in the center, often one-sided. *Skin*, yellowish green, covered with green dots. *Stem*, two inches long, very slender, curved, inserted in a slight cavity. *Calyx*, broad, open, placed in a shallow basin. *Flesh*, yellowish white, coarse grained, melting, very juicy, with an agreeable blending of sweet and acid, and a fine bergamot flavor. A fruit which one will return to with a relish. *Season*, last of September.



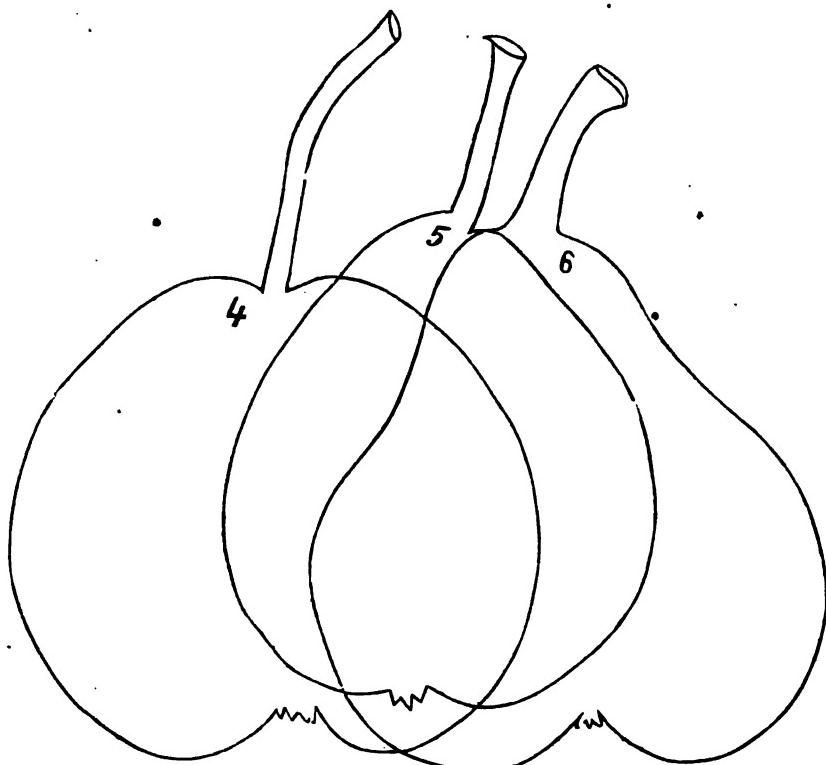
MADAM ELIZA. BEURRE COLOMA. HAMON.

4. LEON LE CLERC DE LAVAL.

Fruit, round, or bergamot shaped. *Skin*, dull greenish yellow, with a brown cheek. *Stem*, an inch and a quarter long, inserted in a slight depression. *Calyx*, small, open, in a moderately deep basin. *Flesh*, white, fine grained, firm, sweet, and juicy, without flavor. It is desirable in so far as it is a late keeper, (this description being made from a ripened specimen on the 6th of April,) fair to look upon, pleasant to the taste, and particularly good for the oven from September onward. *Tree*, a handsome free grower, on pear and quince.

5. GEN. LAMORICIERE.

Fruit, medium sized, ovate, usually somewhat one-sided. *Skin*, rough, green, covered with russety dots, and more or less russet, especially about the base. *Stem*, about an inch long, inserted (often quite obliquely) without depression in a



LEON LE CLERC DE LAVAL.

GEN. LAMORICIERE.

COLMAR DE SILLY.

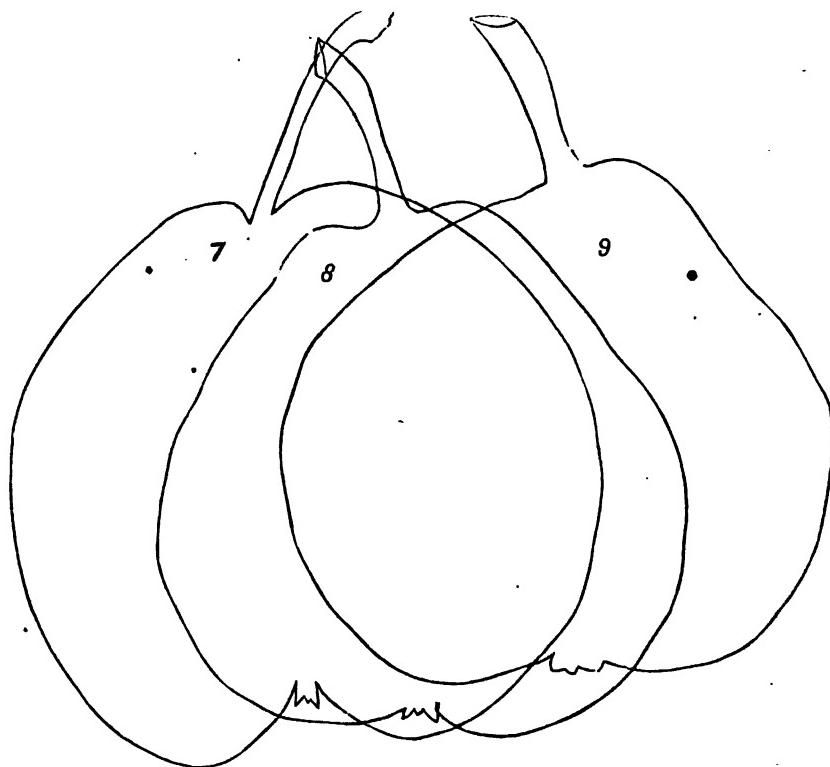
fleshy base. *Calyx*, small, open, in a very shallow basin. *Flesh*, white, rather coarse grained, very melting and juicy, sweet, acidulous, and slightly flavored with bergamot. *Tree*, vigorous, and bears early and well. *Season*, October.

6. COLMAR DE SILLY.

Fruit, medium, pyramidal. *Skin*, yellowish green. *Stem*, short, stout, inserted in a fleshy projection. *Calyx*, small, in a broad, deep basin. *Flesh*, white, rather coarse grained, somewhat firm, exceedingly sweet, melting, juicy, and rich, with a flavor something like the old Summer Bon Chretien, and suggesting also, in taste and consistence, the Beurré Sterkmans. A delicious fruit. *Tree*, a fine grower on pear or quince. *Season*, first of November.

7. BEZI GOUBALT.

Fruit, large, round, one-sided. *Skin*, yellow, with some russet about the stem and calyx. *Stem*, one inch long, slender, deeply planted in a broad cavity. *Calyx*,



BEZI GOUBAULT.

SERRURIER.

ZEPHIRINE GREGOIRE.

small, open, placed in a broad, deep basin. *Flesh*, white, fine grained, buttery, melting, juicy, but wanting somewhat in richness. Though quite agreeable, it is not such a pear as one's palate is eager to encounter again without an interval; having the property of satiating, for the time, beyond most other varieties. *Season*, last of October.

8. SERRURIER.

Fruit, above medium, broad obtuse pyriform. *Skin*, yellow, covered with small brown specks. *Stem*, three quarters of an inch, inserted without depression. *Calyx*, small, in a broad shallow basin. *Flesh*, white, coarse grained, full of a rich, agreeably acidulated juice, very slightly astringent, and with a delicate bergamot-flavor. Much like the Oswego Beurré in consistence and taste, but less highly flavored. The saccharine and acid are gratefully blended, and the fruit is one of the most agreeable of the vinous sort. *Tree* is prosperous on the quince. *Season*, last of October.

9. ZEPHIRINE GREGOIRE.

Fruit, medium, broad, obtuse pyriform. *Skin*, yellowish green. *Stem*, very

stout, inserted usually in a fleshy prominence. *Calyx*, closed, in a broad, shallow basin. *Flesh*, yellowish white, rather coarse grained, very juicy, buttery, melting, and sweet, with a fine bergamot flavor. In consistence and quality much like, and often quite equal to, Belle Lucrative, being only a little less sweet, or rather, perhaps, a little more vinous. *Tree*, a free grower, making a fine natural pyramid on the quince, a great bearer, and the fruit hangs well on the tree. *Season*, October.

It will be observed, probably, that in two or three of these descriptions I have represented the fruit to be without flavor. I felt warranted in this by the definition of the word, as given by a high authority in etymology, namely, "Flavor is the rarefied essence of bodies which affects the organ of taste;" derived, he suggests, from the Latin *flo*, to breathe; the action of the breath being necessary to detect it, while the *palpable* properties, as sweet or sour, are as readily perceived when the breathing is suspended as when it is in action. The propriety of this definition can be illustrated by a simple experiment. Take the Seckel pear, for instance; let the nostrils be closed, and the most industrious mastication will fail to convey to the mind any thing but an idea of its luscious sweetness; this, not being^a a "rarefied essence," is therefore not flavor, it is simply *taste*. Now let the thumb and finger be relaxed—for I suppose the experimenter during this brief trial has been holding his dignity by the nose—and the first expiration, the first *outward* passage of the breath over the olfactories, will reveal to him the sense of its high musky aroma, and this, being a "rarefied essence," is its flavor. If the reader is too impatient to await the possession of a ripe Seckel, the experiment can be made at once by substituting any of the flavored productions of the confectioner.

The pears in question, therefore, lacking this essential property, were described, as the fact demanded, as without flavor. This, however, does not necessarily detract from the character of the fruit, for there are others of the highest quality destitute in the same particular.

Having seen that the loose employment of this word had already led to error, and knowing that a continued abuse of it would always be liable to lead to the same result, I ventured to suggest, in an article published in the HORTICULTURIST for April, 1859, that it be employed in pomological descriptions in its strict sense only. In a subsequent number of the HORTICULTURIST, this suggestion was disconcerted with characteristic ardor by your correspondent, "A Buffalonian;" and the idea of the word, as presented by me, was sharply criticized. In this, his quarrel was not with me, but with him who, seeing the necessity for the word, invented it. I only required that its legitimate signification be adhered to. It is not comprehensible to me why the qualities of a pear whose flesh is described as having a delicious mixture of sugar and acid, or however it might be, would not be as truthfully realized as though the customary ecstasies were indulged in by the introduction and varied performances of the word "flavor," in connection with every quality of the fruit but the right one. In so far as pomology is a science,

the demand is imperative, in my judgment, that its terms should be exact in signification, and rigid in application. By such an employment of language made universal, its dignity would be asserted, confusion in its descriptions avoided, the reputation of valuable fruits no longer placed in jeopardy by unintentional disparagement, and Mr. Downing and Mr. Thomas be enabled to understand each other.

[It were much to be wished that terms were used in pomology with somewhat more exactness and propriety than is often the case, and that there were a better understanding among writers on this subject. Here there is room for improvement; and we should be glad to have the subject fairly and candidly discussed. *Flavor*, according to our apprehension, is an essence or quality which affects both taste and smell, but the latter in an indirect manner. *Aroma* affects the sense of smell alone. We refer to what we conceive to be the primary meaning of these words; and in this sense they could well be used to denote two distinct qualities in fruits. Some kinds possess one quality only; others, both; as, for example, the Bartlett has both flavor and aroma. It is important that there should be some well-defined, distinctive use of these terms. We shall be glad to hear what our readers have to say on the subject.—ED.]

THE APIARY.—I.

BY M. QUINBY.

SINCE I have been a reader of the HORTICULTURIST, I find that your contributors have entirely neglected this important branch of rural economy. The locality of the apiary allies it to horticulture even more than agriculture. Its appropriate place is the garden, yard, or lawn; yet there is scarcely an agricultural journal that does not devote a portion of its columns to this subject.

Among the many adornments with which we are wont to beautify our grounds, there is none which forms so attractive a feature, and which can be so reasonably expected to defray its own expenses, as the apiary. With the increasing interest that has recently been given it, has come the movable comb hive—the only improvement—giving us facilities for studying minutely every part of the interior, thus enabling us to become familiar with the natural history of the bee, which is satisfactory in itself, and enhances our success in management. The Italian bee, lately imported, besides the numerous other good qualities which are ascribed to it, is less disposed to sting, which will remove, in a great measure, the objection to apiculture heretofore existing in many places.

Probably very many readers of the HORTICULTURIST are desirous of introducing

the apiary as a *profitable ornament* to their yard, and are only waiting some suggestions for a satisfactory arrangement to make a beginning. For their encouragement, and the promotion of Bee culture generally, in the absence of something better, I will offer a few remarks on the subject.

As success depends upon our understanding the nature of the bee, rather than on any chance or luck, I would suggest, as a lesson elementary, that its habits be well understood. The hive, and its arrangement in the apiary, should also receive proper attention.

EVERY prosperous swarm or family of bees must contain one queen, several thousand workers, and, part of the year, a few hundred drones.



QUEEN.

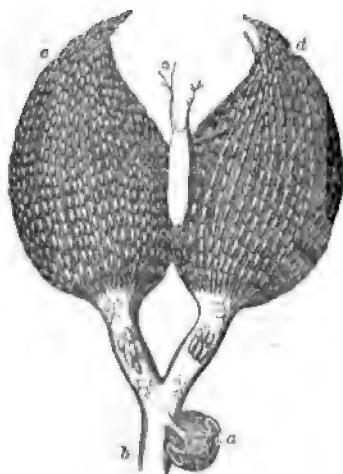


WORKER.



DRONE.

The queen is the mother of the entire family, often depositing more than two thousand eggs in twenty-four hours. In shape she resembles the worker more than the drone, but is longer than either, and, like the worker, has a sting, but will not use it for any thing below royalty. Her color on the upper side is darker than the others; the two posterior legs and under side are bright copper-color. In some of them a yellow stripe nearly encircles the abdomen at the joints. All the colors are bright and glossy, having but little of the down or hair that covers the drone and worker. Different queens vary much in color; some are much darker than others. A still greater variation is presented in the Italian queens, most of which are of a rich golden color, while a few are even darker than the native usually are. For the first few days after leaving the cell her size is much less than after she has assumed her maternal duties. She seldom, perhaps never leaves the hive, except when leading out a swarm, and when but a few days old, to meet the drones for the purpose of fecundation. It has been admitted generally, and now, by the introduction of the Italian bee, still further demonstrated, that the drones are males, that sexual connection takes place in the air—performing their amors on the wing—and that one impregnation is operative for life. It is also supposed, by many, who have examined the subject, that the eggs formed in the ovaries of the queen are without sex; that the simple act of her depositing them in worker or drone cells will decide it, as explained by the following theory. The fertilizing fluid is contained in a small sac, as shown in the engraving, the opening of which the eggs must pass as they are deposited.



(a) Sac, containing seminal fluid, and opening into the viaduct (b). (c, d) the drone cells can never be converted into queens. ovaries.

The abdomen of the queen, on being inserted in the worker cell to deposit the egg, is compressed sufficiently to cause a flow of seminal fluid that fertilizes it. The drone cells are larger, and the abdomen receives no pressure in the act of laying; the egg passes without becoming impregnated, and a drone is the result. The eggs of an unimpregnated queen possess sufficient vitality to hatch drones; whether they are deposited in drone cells, or worker cells, the bee is the same. An Italian queen, impregnated by a common drone, will produce a mixed progeny of workers, yet the whole brood of drones are pure Italians. This fact is of much importance for apiarians who wish to change their native stocks into the

Eggs that the queen has deposited in

Although the experiment has been frequently made, no one as yet has reported success. But eggs that have been deposited in worker cells, and consequently impregnated, can be changed to queens with scarcely a failure. The whole process consists in shutting up without a queen a few hundred bees with a piece of comb containing eggs or young larvae; in a few days they will convert one or more of these into queens: another important principle in propagating Italian bees.

The cells in which queens are raised, differ essentially from those for either the worker or drone. The two latter are made alike, and differ only in size; while the one for the queen is several times larger than either, altogether different in shape, and material enough is used in constructing one to build fifty of the others. These cells are located, usually, on the edges of the combs, in stocks that are preparing to send out natural swarms, and they make the cell vertical from the beginning. It is somewhat oval in shape, half an inch in diameter, and an inch in length; the situation affords the requisite room without interfering with any thing below it. When compelled to rear queens from worker eggs, they vary their work in accordance with the circumstances, destroying a few common cells directly below the one that is to be changed, and then work it outward and downward, making it crooked and seemingly out of place, yet it answers all purposes of changing a worker to a queen.

The food with which the embryo queen is nursed has probably as much influence in the marvellous transformation as the shape and size of cell. It is not only different from what is fed to the common brood in quality, but much greater in quantity. She lies half buried in food, which is a mass of light-colored, jelly-like substance, prepared and deposited without stint. This treatment develops the

mature queen in seventeen days, while the worker is twenty-one, from the egg to the mature bee. Her age is limited to about four years.

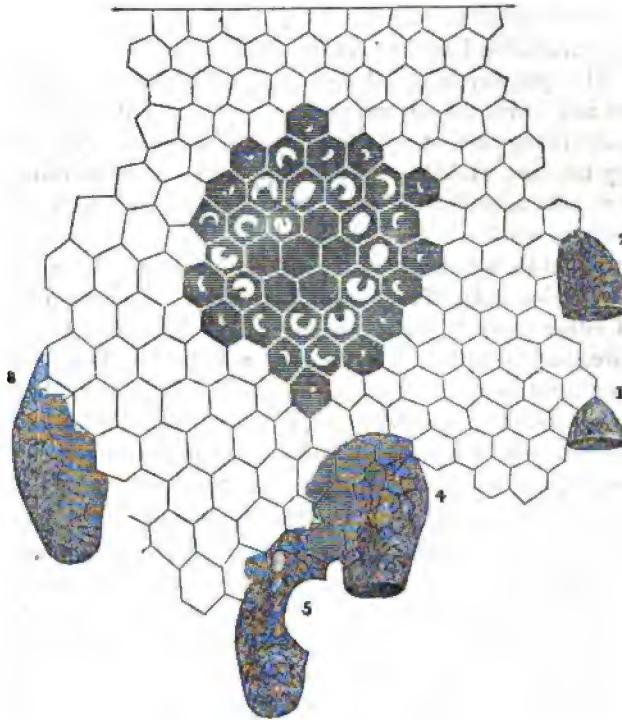


PLATE OF THE THREE KINDS OF CELLS.

The cut represents the eggs and larvae in the common cells. At 1, queen cell just commenced; 2, one sufficiently advanced to receive the egg; 4, queen matured and left; 3 contains a queen; 5, queen been destroyed and removed by the workers; 6, cell just commenced to change a worker grub to a queen; 7, such cell finished.

All labor devolves on the workers. They are provided with a sac or bag for honey; basket-like cavities are on their legs, where they pack the pollen of the flowers into little pellets convenient to bring home. They range the fields for honey and pollen, secrete wax, construct combs, prepare food to nurse the young, bring water, obtain propolis to seal up crevices and flaws about the hive, stand guard to keep out intruders, &c., &c. For the defence of their treasures and themselves, they are provided with a sting and a virulent poison, but will not use it when abroad if unmolested, volunteering an attack only when near the hive. They are all females with organs of generation undeveloped, yet they have enough of the mother about them to make good nurses for the brood of the real mother. For near two weeks after the young worker emerges from its cell, it is almost exclusively engaged within the hive; it then assists in collecting stores.

Its age is from one to eight months, according to the season in which it is hatched. In the busiest season it lasts but a few weeks; at the beginning of cool weather, for several months.

These things are verified by introducing an Italian queen into a full stock of native bees. Her progeny being all marked, it is readily ascertained when the first is mature and leaves the cell where it is first employed, when it first leaves the hive, and at what age it first collects stores. When it is seen that the marked bees gradually increase, while the others disappear in the same ratio, and at the end of a few months none but the new variety are left, we have a reliable index as to the age of the worker. The drone is the male; their bodies are large and clumsy, and without the symmetry of the queen or worker. Their buzzing, when on the wing, is louder and different from the others. They seem to be of the least value of either class in the community; they assist, on some occasions, to keep up the necessary animal heat in the hive, and one only in a few thousand is called upon for services in fecundating the queen. They leave the hive a little after noon in fair weather, at which time the young queen issues to meet them. To prevent the necessity of repeating her excursions too many times before being successful, may explain why there are more drones reared than at first appears necessary. The number reared depends upon the strength of the colony, and the stores on hand or being collected. A colony very weak, or near the starving condition, can not afford to have them. Whenever a scarcity of honey occurs, whether it be the first of June, last of July, or last of September, the whole brood is destroyed after removing the larvæ and chrysalis from the cell. Their life is very precarious, being cut off at the end of a few hours, or extended to a few days, weeks, or months, but averaging much less than the worker.

• (To be continued.)

[Believing Bee-culture to be a profitable as well as ornamental accessory to Horticulture, we welcome Mr. Quinby's contributions with decided pleasure. His articles will be fully illustrated, and in their course several designs for ornamental Bee-houses will be given. The introduction of the Italian Bee has given a new impetus to apiculture, and enabled us to decide several important and interesting facts, as well as developed some new ones. The whole subject is charmingly interesting.—Ed.]

THE VERBENA.—No. 2.

BY A. VEITCH, NEW HAVEN, CONN.

IN reply to Mr. Pentland's strictures on my article on the Verbena, it may be remarked at the outset that I do not quite agree with him regarding the consequences likely to arise from discussing questions relating to horticulture, provided such

discussions are conducted in a liberal and candid spirit, and "when the thing sought is truth rather than victory;" believing, as I do, that truth has never eventually suffered from having her claims to acceptance and belief freely investigated, but has come out of all such trials that "bright and shining thing" she ever was and ever shall be.

I disclaim all personal motives in what I have said, or may yet say, on this subject. In proof of this, it is enough to state that I do not cultivate flowers for sale, and, of course, do not "depend upon the public for my bread and butter." And as I make no pretensions to being an Englishman, I have no greater reason for feeling sensitive on account of any thing said of them, than Mr. Pentland himself. This being the case, his references to "beef" and "plum pudding," &c., are meaningless, being entirely wanting in application. It is needless, however, to mention nationalities in a dispute like this. I recognize none. In matters relating to horticulture, I am willing to "smoke the peace-pipe" with Frenchmen, Englishmen, Germans, and Americans; and would have a word to say in behalf of any or all of them, and Mr. Pentland himself, should they or he be unjustly assailed. I did think, however, Mr. Pentland talked of a respectable class of men in rather a flippant and disrespectful manner, and dealt them some side thrusts which, to say the least, were not creditable to his magnanimity. It seems, however, we have been all wrong in supposing he said any thing derogatory to the English florists. We accept his explanation, but can not help thinking his statements looked rather obscure, and very likely to be misunderstood.

It seems to be a foregone conclusion with some, that varieties of the Verbena originating in England are not so well adapted to the American climate as those raised here. Now, on this subject there may be a diversity of opinion. It can not be disputed, we think, that many which do well there, when brought to this country do not give satisfaction, owing, no doubt, to peculiarities of constitution which fit them for the one climate and not for the other. But to suppose that foreign varieties generally do not succeed as well here as natives, can only be a gratuitous assumption, and is by no means supported by facts. I am utterly at a loss to understand how the influence of climate operates upon the "morphological law of change" in the production of new varieties, so as to fit them better for one climate than another. It seems far more in accordance with known facts to suppose that varieties come into existence in every country not suited to that country, and, of course, cease to be grown there; whereas, were they taken to a location every way adapted to their peculiar temperaments, "the case being altered, would alter the case." So far as I have been able to investigate this nice question, the conclusion forces itself upon me that it matters little, if at all, where varieties originate, as to whether they are "good growers, fine bloomers, and their colors not burn out with the sun;" and rather think these properties are bestowed upon some, and not on others, from the operation of occult causes not subject to the control of climate at all. By a careful collation of facts, the evidence in support of this proposition becomes overpowering.

And further, I believe the experience of the best florists will bear me out in saying that imported varieties, in general, grow quite as vigorously and stand the sun as well as native sorts. In proof of this, do not Robinson's Defiance, Mrs. Woodruff, General Simpson, and dozens more which could be named, do better than "tolerably well," and a hundredfold better than such home productions as Uncle Tom, Chenedole, Painted Lady, (what a name!) and many more, really good, if they could be made to grow better, and their colors not "burn out?"

Mr. Pentland asks if I suppose this thing of pandering to this European opinion is all right, and that we Americans do not know a good flower when we see it. He can not have inferred from any thing I have said that I entertain any such opinion. I do not hesitate to say, however, I believe the people in this country far better "posted" on fruits than flowers. And if they bestowed one fourth the attention on flowers they so devotedly do on fruits, floriculture would soon be in that condition so much desired by its best friends. If there is such a thing as pandering at all, I most surely think it wrong. But even granting it true, there does not seem to be any thing about it to frighten any one. And, withal, it may have been productive of greater good than Mr. Pentland would be willing to admit.

The state of society in this country is greatly different from what it is in some of the countries in Europe; England, for example. Here the wealthy classes generally are a little more gregarious than the same class there. Here they may purchase land and a home for themselves one year, and sell it the next; whereas in Britain the landocracy at least have their estates secured to themselves and their heirs by the laws of primogeniture and entail. On these estates they can plant gardens and build conservatories without the apprehension of one day seeing them in the possession of strangers. And they generally do this on a scale proportionate to their means. These places are mostly superintended by gardeners, who, as a class, are intelligent, and have had to go through a regular course of training for many years before they can be so promoted. From the position they occupy, they have many facilities for making their influence felt and acknowledged as no mean power in carrying forward every thing relating to horticulture to still more advanced posts on the highway of improvement. In short, gardeners there are not the drudges too many of them are here, but have time to collect every valuable plant within their reach, and purchase novelties. With these as a stock to work upon, they, by *selecting seed from plants only which indicate the points they wish more fully to develop*, and by letting "patience have her perfect work," sometimes even astonish themselves with the progress made. And then, the professional florists pursue their calling with a devotedness and zeal worthy of the cause in which they are engaged. Their local, provincial, and metropolitan shows; their published standards of flowers for the guidance of growers, competitors, and judges at exhibitions; these reasons, and many more which could be given, have served to place floriculture in a high position indeed in that country.

As already hinted at, floriculture is not so high in public favor in America as its best friends would wish; not that any one class in the country is directly to blame, but rather it has not had sufficient time to grow. Of course, while in this state much can be done for its advancement, by professional florists especially. Who are they, and what is their mission? Are they not the administrators of its laws, the monitors in its schools, the professors in its seminaries, and the men above all others, from the positions they occupy, who mold and give complexion to public sentiment and taste in things relating to their profession? There are many good and true florists throughout the country who fully sustain this character, and I have no doubt but Mr. Pentland is one of them; but these may live far apart, and be jostled on every side by quite an inferior class, who, being

"Blind of one eye, and with the other squint,"

bring every thing relating to the business into disrepute in the estimation of "the discerning public," and cause them to look even beyond the seas for a redress of the grievances inflicted upon them by those who may be good and honest enough in their intentions, but not sufficiently indoctrinated in the secrets of the art to make them reliable guides to such as need a better judgment than their own to lean upon.

Mr. Pentland is not insensible to the low state of floriculture in the country, but surely he must be mistaken in attributing the cause thereof to the "pandering to European opinion." If it had been in a worse condition in Europe than it is here, and the people obstinately persisted in turning their faces toward the east in search of something to admire, not from any inherent value in those objects, but blinded and led away by the names by which they may be called, then it might in justice be said of them, they are the veriest "panderers," and their conduct savors rankly of "toadyism." But when the opposite of this is true, as could be proved to the satisfaction of every candid mind, we can not help thinking that, instead of this leaning upon European opinions being a check upon your own progress, it has been a principal power in craning up public taste to the position it now occupies. It may be true that certain parties have shown their "gullibility" by refusing to pay a high price for American seedlings until they received European names; but this militates no more against the position we seek to establish, than a hypocrite in society does against the fact of honest men being there also. or counterfeit coin in a country against the genuine and true metal. Does not the one rather prove that there is virtue in the one case to be simulated, and value in the other to be feigned? Perhaps redundancies grow out of the system which would be better pruned away; but how these manifest themselves I do not know, and humbly think Mr. Pentland has hitherto failed to point them out.

We believe a new era in floriculture is at hand, but even during that period, the practice of collecting flowers, new and good, will not be stopped, but receive a fresh impulse from every forward movement it makes. And instead of complaining of

this as "humiliating" to yourselves, it seems to me a reason why you ought to feel proud. Humiliating, forsooth! Viewing the question in this aspect, the Europeans must have well-nigh reached the *nadir* of their humiliation. What country in the world have they not explored in search of new plants? as witness the labors of Humboldt, and Bonpland, Tweedie, and Lobb, and Douglass, (poor Douglass!) and Fortune, and Veitch, (Exeter Veitch.) They are grateful to you for your magnificent trees, beautiful shrubs, and interesting herbaceous plants; and, bating these, you sent them their first white verbena, as well as many other things really valuable, for which they have not been ungrateful. Why, then, think it "humiliating" to take from them in return their greatest novelties and newest patterns? These, added to everything good of your own raising, must enhance the value of your stock, and multiply your chances of keeping forward in the march of improvement. The fact that there is a demand for every thing good in the way of new flowers, come from what quarter they may, speaks well for the state of public feeling, and unmistakably indicates a better time for floriculture than any that has gone before. And although the portentous omen Mr. Pentland calls "pandering" has spread itself over the whole floricultural heaven, frightening timid souls with imaginary evils, it is surcharged with no influences hurtful to your interests, but is only a "sable cloud" that

"Turns forth her silver lining on the night."

and even now gives out as much light as to show your own entanglement, and the way of escape to a more hopeful and better-ordered state of things.

[We are by no means disinclined to have this subject continued, for we can perceive wherein much good may come from it. In the end there will be established a greater unanimity than has heretofore prevailed, and a better understanding of the whole subject.—ED.]

CAMELLIA SPIRALIS RUBRA.

(See Frontispiece.)

BY THE EDITOR.

We present for a *frontispiece* this month a remarkable Camellia raised by the late Noel J. Becar, in his day one of the first Camellia amateurs in the country. This is the Camellia which Mr. Becar first dedicated to A. J. Downing; but this name was subsequently given to another seedling, of which we also have a plate. The flower now presented has never been named, but by some has been vulgarly called the *Screw*, a name more expressive than elegant. We now give it the name of *Spiralis rubra*. The form, as now given, is constant, and not a mere variation. It will be noticed that the spirals are remarkably symmetrical, and we have never

seen them otherwise. The color and substance are unexceptionable, and the habit good; and among those who admire a departure from ordinary forms, it will become a popular plant. Our drawing was taken from a plant grown by Mr. Humphreys, of Brooklyn, who has the original stock.

REMARKS UPON HARD-WOODED GREEN-HOUSE PLANTS.

BY DANIEL BARKER, HARTFORD, CONN.

In potting delicate and sickly plants, (a few of which I had the good fortune to handle a few months since,) such as *Epacris*, *Erica*, *Helichrysum*, *Boronia*, &c., indeed, most if not all hard-wooded green-house plants, the greatest care is necessary. In the first place, we will suppose that the plants in spring are found in a dirty, sickly, neglected state; (upon this point I speak quite feelingly.) The plants should be taken carefully out of their pots, and if it be found, upon examination, they are making fresh roots, they may be potted in the same sized pots again, reducing the ball of earth about one third. Should the roots be very strong, a size larger pot may be used. In either case its own peculiar soil may be used, made somewhat more sandy than usual, and the greatest precaution taken that the pot is well drained, (the arguments advanced by Un Sot—a triple Etage—to the contrary notwithstanding.) The soil, in potting, should be made quite firm, being careful not to leave a vacuity between the roots and the sides of the pot. When potted, the plants should be removed to the green-house or cool frame, where they can have plenty of light, and be shaded when necessary, until they are well established.

Should the plants be sickly in consequence of being over-potted, or the soil become sour or sodden with water, a considerable quantity of soil must be removed from their roots, without injuring any of their fibers which may be alive. They should then be potted in as small pots as the roots can reasonably be compressed into, rendering the soil quite firm both among and around the roots. Should the ball be found very wet, it will be well to allow it to become somewhat dry before it is repotted. Our practice in repotting hard-wooded green-house plants, is invariably to elevate the center at each potting, having found by experience that the genus *Erica*, and all New Holland plants, are greatly benefited thereby. Nothing can be more injurious to plants of this class than keeping them low in their pots; indeed, as a general rule, with few exceptions, no plants should be placed lower than they were in their former pots. After this operation is performed, the plants should be placed in a close frame or green-house, where the temperature can be kept rather warmer than in an ordinary green-house. In such a situation they will soon commence to grow, (the necessary care and attention being given them,) and in due time become quite recovered. But if no such convenience is at hand, they may be placed in the closest part of the green-house, where

they can enjoy plenty of light, and be shaded from the rays of the sun until they are sufficiently recovered to bear exposure without wilting.

Great care is necessary in the application of water; frequent supplies in moderate quantities should be the standard rule.

Should a plant become sickly during the summer, it should be submitted to the course above recommended without delay. If in the fall, they should be repotted and kept in a warm part of the green-house until the following spring; but if in the winter it is perceived that any are becoming sickly, it will be found best to let them remain until the month of March, giving them as little water as possible during that period, after which they may be treated as above recommended.

GRAPE AND WINE CULTURE IN LOS ANGELES, CALIFORNIA.

BY OUR CALIFORNIA CORRESPONDENT, J. Q. A. W.

The cultivation of the Grape has been attended with unparalleled success, even beyond that of the most prolific countries of Europe; but, owing to causes which have now become known, the manufacture of wine has not been attended with that success which should be warranted. Some outside parties have bought up cheap wines, doctored them up, and then thrown them upon the market, to the great discredit of those honorably engaged in the business. Capital is needed to develop. No fair test has yet been made, as sufficient time has not been allowed for the wine to attain a proper age; and it has been sent to market regardless of reputation, in order to realize for the outlay. Again, the great expense attending the manufacture of the wine in this country, the scarcity of capital, owing to the high rates of money, and storing it until it has attained a sufficient degree of perfection, have caused new and immature wines, improperly made, to be forced upon the market, to the great injury of the article in this country. These errors will be avoided by time, experience, and study, and the business come under the control of parties sufficiently able, pecuniarily and otherwise, to carry it on safely and scientifically; then the evils will in a great measure be avoided, under which this business now suffers, and wines will be produced in this country which will not be inferior to foreign manufacture, but will even surpass them.

During a late trip to Los Angeles, I had the pleasure of visiting the prominent vineyards and wine manufacturing establishments for which this county is so famous. Some of my reports have already been published in the Stock Journal; and as many of your readers may have an interest in these matters, I will at this time give a brief sketch of the famous vineyard and orchard of Wm. Wolfskill, situated in the southern portion of the town, having inclosed some hundred and forty acres, a hundred and five of which are devoted to vineyard and orchard, and fifty-five acres to the vineyard alone.

This vineyard is the largest in the city, containing over one hundred thousand

vines; ninety thousand vines being in bearing, and fifteen thousand two-year old vines. The crop of grapes the past season was over seven hundred thousand pounds.

In the orchard there are a large number of the most approved varieties of fruit trees, pear, peach, apple, plum, &c., all looking well; also figs, limes, citrons, walnuts, olives, oranges, etc., in profusion, and bearing full crops. The grounds are laid out with much taste and neatness. The crops of the English walnuts amount to from two to three thousand pounds, and are superior in flavor to those imported. These are sent to market, commanding about fifteen cents per pound. The olive trees were particularly attractive, from their fresh green foliage. These are long lived, hardier than other trees, and bear profusely. Among the tropical fruits, however, Mr. Wolfskill has devoted much time and care to the cultivation of the orange, having in bearing some forty large trees, which present a most beautiful appearance. There is besides an orchard of some two thousand more, about seven years old, and nearly in bearing. This is the largest and finest orange grove in the State. The fruit thrives well in the southern portion of the State, where the climate is warmer and more genial than in other portions.

The trees are in full bearing at fourteen years of age, and continue to the age of fifty or upwards. The earliest period of bearing is about the seventh year. The foliage is beautiful and green the year round, and the trees are very bushy at the top, growing to the height of thirty to forty feet, and when in full bearing have often to be propped up, on account of the weight of fruit. They bear from one to three thousand oranges each, when in a healthy state, and the fruit commands a ready market and good price. Many of these trees have netted Mr. W. from \$100 to \$150 each. The fruit commences to change color about November, and ripens about January to February. A disease has of late attacked the orange in the shape of a scale insect, called the *Coccus Hesperidum*, the ravages of which have much diminished the crops, as well as injured the trees, and no remedy has yet been found which has proved successful in their destruction. In some orange-growing countries, an insect which preys upon this has been introduced, which has destroyed the scale insect, and been the means of preserving the trees from the ravages which had proved so destructive. I have much matter of interest connected with orange culture, which I will perhaps introduce at another time.

Mr. Wolfskill, formerly a trapper, came to this country in 1831, and has been on the present place since March, 1838. He is a very industrious old man, and dresses very plainly, yet seems to enjoy an easy and contented life. His estate is very valuable, and, as I remarked, the orchard and vineyard are the largest and finest in the state. In a few years, the orange crop must amount to quite a fortune in itself.

Messrs. Kohler & Frohling have purchased, the present season, the entire grape crop, as they have for the last four years, and manufactured the same into wine in Mr. Wolfskill's place, where the large cellars and distilleries are. The principal

building is new, and made of brick, being 140 feet long and 20 feet high. They have one brick cellar for storing the wine, 100 feet long; another large cellar, 85 feet long by 50 feet wide, built of adobe, with brick wall around, which will store over sixty thousand gallons. In these cellars are to be seen the large pipes of wine. Altogether, the cellars contain over one hundred thousand gallons of wine. There are also cellars running under the entire house, full of wine.

The crops the present season, from the Wolfskill vineyard, will produce from forty-five to fifty thousand gallons of wine. Messrs. K. & F. have also purchased the crops from the following vineyards, to wit, the "Ramons Valenzuela" vineyard, "Don Andreas," "Isidora Reys," "Azuza Ranch," "Wm. Workman," (La Puente) and "Ellis Moulton." The whole crop of wine amounts to about 145,000 gallons. They employ during the wine season about forty Indians, paying them from fifty to seventy-five cents per day.

The close of the vintage of 1850 was celebrated by a fête or "Harvest Home," to which all who had participated in the manufacture, as well as a large number of invited guests and members of the press, were present. My absence from the city, (being on a tour in the country,) alone prevented my accepting an invitation to be present.

In connection with the above, I will state that Mr. Stern is now on his way to New York, to open a house for the sale of these wines, under the firm name of Perkins and Stern, as a branch house of Kohler and Frohling. The establishment will be open about the first of March, the wines being expected to arrive about that time, some one hundred pipes being on the way, of all the varieties of wine manufactured, to be followed by regular shipments. In the establishment in San Francisco are some ten large cellars, containing about seventy-five thousand gallons of wine, of different brands and vintages.

I have alluded to the above establishment somewhat at length, that your readers may have some idea of one of the prominent establishments in Los Angeles. There are other manufacturers of equal merit, as Sansevaine Bros., M. Keller, Hoaver, White, Wilson, &c., whom I may allude to at another time.

There has been of late much complaint regarding California wines, from the causes alluded to, and owing to shipments east of poor wines, which have most unfortunately thrown a discredit upon the article. Some articles have appeared in different journals here concerning the matter, in vindication and otherwise; and a late article in the Shipping List, concerning a shipment to New York of cheap wines, may have an injurious tendency which should be corrected. Soon after the article appeared, in November, a reply was made by a well-known correspondent, through the columns of the Echo de Pacifique, which would not be out of place here, but would place the subject in a true light, and I can vouch for its correctness.

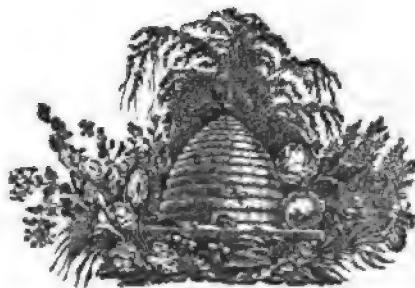
I can heartily endorse the article, and hope it will be read with interest, should you find room for it in your columns.

I myself can speak with some knowledge of the increase of this business, having

followed it up for the past year, and during my last visit to Los Angeles had ample opportunity for visiting all the wine making establishments in the place. I can attest with knowledge of the house of Sansevaine Bros., of Los Angeles. Any one who may have visited their large establishment during the wine-making season, as was my pleasure, would see their wine-presses, rollers, crusher, &c., in full operation, and all put up in the latest French style, and any doubt as to their ability of manufacturing wines would have vanished. This house alone presses forty-five thousand pounds of grapes daily, which yield three thousand gallons of wine.

In my next, I will make further reference to this subject, alluding to the prospects of wine culture in California, and a glance at the establishment of Messrs. Sansevaine Brothers. I send you copies of the report on Grape culture, lately published. This subject is, as you see, attracting great attention, and great results are expected ; and so for the present, *Adios.*

[The above is the beginning of a series of articles from California, written by a gentleman thoroughly familiar with the subject, and who handles the "pen of a ready writer," having for some time been a member of the "corps editorial." We have no doubt these articles will be found deeply interesting. We have omitted the extract alluded to above for want of room. Mr. Stern, above mentioned, is now in New York.—Ed.]



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURE."

We appear late this month, but for reasons beyond our control. The sad times in which we live have caused changes in our publishing house and business relations, and the adjustment of these has rendered it impossible to issue the July number at an earlier moment. It is really a cause for sympathy, and not for complaint, and we trust our readers will so regard it. Hereafter we shall be enabled to appear promptly.

A CHANGE.—The reader will notice a change in our dress. It is one we have long desired to make, and which we think will give general satisfaction. We have others in view, but they must bide the times.

THE CURCULIO.—There being few or no plums this year for the Curculio to operate on, it has betaken itself, in multitudes, to the Pear, the Apple, and the "black knot." Apples and Pears are falling freely from the trees, almost every fallen specimen having been stung three or four times, and in not a few cases we have counted upwards of a dozen punctures on the same fruit. In two or three instances we have taken from fifteen to twenty larvæ of the Curculio from the same "knot." We allude to the subject now, not for the purpose of making any extended remarks, but to request our readers to examine their fruits, and report such facts as they may observe in connection with this subject. The Apple will be found to be suffering especially from this cause. It will be interesting to learn how far the plum protects us from the loss of the apple crop.

FAIRFIELD Co. HORTICULTURAL SOCIETY.—Under this name our friends in Fairfield County have formed a Horticultural Society, to whom we extend a most hearty welcome. The movement originated, we believe, with Mr. Davenport, of Stamford, who has met with a hearty coöperation; and so vigorously has the project been pushed, that within a few weeks of the formation of the Society a successful public exhibition has been held. If the same spirit continues to animate them, we shall expect to hear great things of the Fairfield County Horticultural Society. The county is wealthy, and contains plenty of material for a useful and permanent Society. From a report sent us by one of the officers of the Society, we condense the following account of its first exhibition.

The exhibition was held in Washington Hall, Bridgeport. The room was tastefully decorated with greens, and on the walls were a number of fine old paintings, loaned for the occasion. Three long tables were placed across the room; the first was covered with plates of strawberries, interspersed with bouquets; the second, or central one, was devoted to plants and flowers; and the third to apples, cherries, and grapes. The sides of the room were given to roses, vegetables, native wines, &c. The music was furnished by Prof. Spinning, assisted by Messrs. Spinning and the Messrs. Balcomb as a quartette. The Star-Spangled Banner, Red, White, and Blue, and Good Night, were finely sung by a youthful choir from Mr. Strong's High School and Mr. Peck's Golden Hill School. The display of fruits, flowers, and vegetables was highly creditable for a beginning, and the exhibition may be regarded as a good success. The company seemed to enjoy themselves greatly, and to feel proud that they had started a society. Let their pride hereafter consist in properly sustaining it. Prizes were awarded as follows:

Strawberries.—1st premium, S. W. Faulkner, Stamford, \$2. 2d premium, James Wilson, E. Bridgeport, \$1. 1st premium, best three dishes, John North, Bridgeport, \$1. 1st premium, best two dishes, J. B. Hoyt, Stamford, \$1.

Grapes.—1st premium, best five dishes, F. Payne, Westport, \$2. 1st premium, best 10 dishes, J. North, Bridgeport, \$2. 2d premium, best two dishes, George Elder, Stamford, \$1. 1st premium, two vines in pots, Oliver Hoyt, Stamford, \$1. 2d premium, two vines in pots, J. R. Hoyt, Stamford, \$1.

Cherries.—1st premium, H. W. Chatfield, Bridgeport, 50 cents. 2d premium, C. M. Noble, East Bridgeport, 50 cents.

Flowers.—1st premium, Plants, Frederic Fervena, (Gardener to N. Wheeler,) \$2. 2d premium, J. Grant, Bridgeport, \$1.50. 1st Hardy Perpetual Rose, Lindley & Hinks, Bridgeport, \$1. 2d premium, Hardy Perpetual Rose, F. McNamara (Gardener to E. Howe, Jr.,) Fairfield, dip. 3d premium, Hardy Perpetual Rose, F. Fervena, dip. 1st premium, Bouquets, William Brown, \$1. 2d premium, Bouquets, Thomas Geraty, (Gardener to O. Hoyt,) \$1. 3d premium, two Bouquets, J. Gillette, Fairfield, \$1. 4th premium, three Bouquets, Lindley & Hinks, Bridgeport, \$1. 4th premium, one Bouquet Wild Flowers, Mrs. Avery, Newtown, dip.

Vegetables.—1st premium, eight varieties, J. Meachem, Stratford, \$1. 2d premium, 9 varieties, M. Shanley, \$1. 1st premium, Kahoon Rhubarb, J. B. Hoyt. 2d premium, Kahoon Rhubarb, I. H. Whiting, Bridgeport, 50 cents. 1st premium, Cherry Currants, J. De Martin, Membership ticket. 2d premium, Cherry Currants, A. Lyon, 50 cents. 1st premium, five pots of Okra, Rev. M. Smith. 1st premium, Cucumbers, E. Curtis, Membership ticket.

Wine.—1st premium, best col. Native Wine, F. B. Wheeler, Bridgeport, \$1.50. 2d premium, col. Native Wine, T. Benedict, \$1. 3d premium, four vintages Native Currant, N. F. Peck, \$1. 4th premium, fine Rhubarb, T. Benedict, dip.

THE ROSE BUG.—Contrary to our expectations, and, we may add, past experience, the Rose Bug is this season more abundant than we remember to have seen them for a dozen years past. They have usually been comparatively scarce after a very severe winter; but the past winter, though one of almost unexampled severity, seems to have had no effect in lessening their numbers. About New York it may be said, almost literally, that there are no cherries for them to eat; but the grape, the rose, and the leaves of the vine and the cherry tree, are suffering terribly, and the woods swarm with them. Every horticulturist ought to declare a deadly war against them. Organize Anti-Rose Bug Societies; arm yourselves with a basin of water and a stick; give the limb a gentle tap, and they will drop in the basin; you have then nothing to do but crush the life out of them with your foot. A less tedious plan is to spread a sheet under the vine or tree to catch them as they fall; but it is not so sure, since, after falling three or four feet, they often take to the wing. Their destruction must be secured in some way; their existence can only be tolerated at the expense of half our crop of cherries and grapes, to say nothing of minor evils.

ORNAMENTAL FLOWER POTS.—Mr. Eberhardt has placed on our table specimens of flower pots made of metal. They are of pretty design and neatly painted. The saucer is attached to the pot by a simple contrivance, which does not interfere with drainage. For the parlor, as a receptacle of the common earthenware pot, they are very pretty; but for the ordinary purposes of growing plants we do not think they are well suited.

WIRE BASKETS.—Mr. Davenport, of Stamford, has sent us a new pattern of wire basket, with which we are much pleased. The design is very pretty, and the work is done in a most thorough manner, as is the case with all the wire work of Mr. Davenport that we have seen.

BROOKLYN HORTICULTURAL SOCIETY.—We are indebted to Mr. Miller, the energetic Corresponding Secretary of this Society, for an account of its last exhibition, from which we condense as follows. In view of the times, it was deemed best to avoid expense as much as possible, and the exhibition was consequently held in the Society's meeting rooms, and was "really a charming display—not too much. The rooms were handsomely decorated with evergreens and very fine plants of Fuchsias, some of which were eight feet high, and most symmetrical, showing fine cultivation. None have ever been exhibited that surpassed those of Mr. John Humphreys." Mr. Burgess, of East New York, exhibited sixty-five varieties of Sweet Williams, which are said to have been very fine. He also exhibited a fine collection of Roses, two of which were seedlings of merit. Messrs. Dailedouze and Zeller usually make fine displays of cut flowers, but on the present occasion they are said to have had the best collection of Roses and Carnations ever exhibited before the Society. Mr. Barnes, in his fine collection, had

a superb new Pelargonium, name not given. Mr. John Friend exhibited a good collection of cut flowers. The President made a good show of miscellaneous plants. Mr. Hamlyn exhibited fine Ericas. Mr. Weir made a good show of Bouquets and Baskets. The only fruit consisted of a large and fine bunch of Black Hamburgh and Muscat of Alexandria Grapes, from Mr. Chorlton. Mr. Williamson, artist, sent in some very good oil sketches of fruits and flowers.

No premiums were awarded on this occasion, and it was thus shown that a good exhibition can be got up without this stimulus; still the absence of a number who have heretofore exhibited shows that the premium is not without its influence.

On the second of July the Society held the first of a series of meetings for conversational purposes. The audience on the occasion was composed partly, and very appropriately, of ladies. On the table were a collection of Strawberries from Mr. Fuller, seedling Carnations, &c., from Messrs. Dalledouze and Zeller, Fuchsias, Dahlias, and Bouquets from Mr. Humphreys, Fox Gloves and Sweet Williams from Mr. Burgess, a collection of flowers from Mr. Barnes, and very fine Gooseberries from Mr. Miller. After some introductory remarks by the President, Mr. Fuller described some of the leading Strawberries and their culture, in which he recommended the removal of all runners. He gave a prominent place to the Triomphe de Gand and Bartlett. He also recommended the ladies to *try* and raise seedlings. There, Mr. Fuller, that will do. Of course they'll try; they always do try.

Mr. Brophy made some very appropriate remarks on the beauty and influence of flowers. Mr. Pardee discoursed in familiar style on the benefits and advantages of such meetings to members and others, and of their coming together and fully giving their experience in the plainest English, so that all may understand.

This was mostly a preliminary meeting, but from the spirit which prevailed we conclude that these conversational meetings are now fully inaugurated, and trust they will go on, and be abundantly fruitful in good results, which can not fail to be the case if the members are true to themselves and the good cause. These meetings will present a fine opportunity for interesting the public in the work and success of the Society, and they should therefore be widely published. At the public exhibitions they can see *what* has been done; and at these meetings they can learn *how* to do it, and this is just what is wanted to make the public feel an interest in the Society's permanent success; to make them feel, indeed, that it is as much their society as the gardener's.

NECTARINES.—We are indebted to Mr. Hamlyn, gardener to W. C. Langley, Esq., Bay Ridge, for very beautiful specimens of the Stanwick Nectarine, and also a new white variety which we do not know. The latter has a beautiful white waxy skin, but is not equal to the Stanwick. The Stanwick is large and handsome, sometimes with a red cheek, is juicy, sweet, fine flavored, and quite equal to its high reputation. We are greatly pleased with it.

NEW ROSES.—We are indebted to Mr. Dailedouze, Brooklyn, for specimens of Madame Boll and Francis I. Roses. The latter is a rose of medium size, full, of good form, and a beautiful dark crimson color. It promises to be one of the best of its class. Madame Boll is a very large rose, full, compact, of good form, a beautiful deep rose color, and abundant bloom. One flower contained three hundred and thirty-two petals. The flower stem is short, and the flowers are completely surrounded with leaves, set up close under the buds, and the effect is very beautiful. Madame Boll we esteem a first class rose; it is just a little coarse in its texture, and that is about the only fault we can perceive in it. Both the above roses are fragrant.

“One Concerned,” who writes us from Portland, must send us his name, not for publication, but to comply with a recognized rule from which we do not deem it wise to depart.

SEEDLING ROSES.—We have received from Mr. Burgess, of East New York, two of his seedling Roses. One is in the style of Queen of the Prairies, but darker, and with a larger cluster. The form and color are good, and the habit strong. The other is a large rose of the Hybrid Perpetual class; form good, full, compact, and habit robust. They are both Roses that we shall expect to hear of again.

TALL RYE.—We have just been shown a sample of Rye grown on the so-called “barrens” of Long Island. The stalks are over five feet high, the head long and fairly filled, and giving promise of good yield. We have seen worse Rye many a time. The present is a sample of four acres, grown on land reclaimed last August. The undergrowth and roots were grubbed up, and burned on the land, which was then thoroughly plowed and dressed with 150 pounds of guano to the acre, which we do not by any means consider the best dressing it could have had. It is simply absurd to call land barren and worthless that will produce such straw.

A RIVAL TO THE WILSON.—The Strawberry Bont St. Julien, which we have seen for the first time this spring, promises to rival the Wilson in productiveness, and it is certainly much superior to it in flavor. We have only seen it in one place, and its wonderful yield may have been the result of some peculiar fitness in the soil. Have any of our readers grown it? We should like to hear more of it. La Constante, which came to us as the most productive of foreign varieties, has, wherever we have seen it, borne only a moderate crop; but the berry is large and the quality very fine.

BRIGHT'S GRAPE CULTURE.—We are indebted to the author for a copy of the new edition of this work, which, we regret to say, we have not yet found time to examine, except to see that it contains much new matter. We shall allude to it again. It may be had of C. M. Saxton, 25 Park Row, New York. Price 50 cents.

MR. FULLER'S STRAWBERRIES.—We recently, in company with a committee from

the American Institute, visited Mr. Fuller's nursery for the purpose of examining his seedling strawberries ; and we are compelled to say that we have nowhere seen a collection containing so many varieties of merit. We saw the original bed last season, in company with Mr. Pardee, and some seventy-three kinds were selected for trial ; and it was now our object to examine these, and also a small bed of new ones. The examination resulted in reducing the number to a dozen, to be kept for another year's trial. Mr. Fuller has wisely determined to send none of them out till they have been fully tested. The dozen alluded to have been selected in reference to their size, quality, productiveness, and hardiness, and if they sustain their present character in these respects they can not be regarded otherwise than as acquisitions ; six of them, however, being in these particulars superior to the others. Nos. 7, 14, 20, and 53 we esteem the best of the lot ; 14 is a berry of remarkable flavor. For the present it is not necessary to otherwise describe them.

Correspondence.

PETER B. MEAD, Esq.: As we have passed through another winter, and a severe one for fruit trees and vines, it may not be uninteresting to you to know the result of the season on the fruits and vines in this place ; and I will write a short letter, giving my observation on them, hoping that they will be of a little interest to you as a horticulturist to pay for their perusal.

The peach blossoms are almost all killed, I having seen but about twenty blossoms this spring ; and the trees are coming out with but a very few leaves, and look mostly dead.

I have seen but one solitary cherry blossom ; and the trees look bad, and as if they were dying.

Plums look bad, and are leaving out very scattering, and I have not seen a single blossom about here this spring.

May there not be something gained in the loss of the above fruits for a season or two, in the destruction of the curculio by the loss of their favorite places for depositing their eggs, and thus they die out ?

Pears did look well in the early spring, and the trees blossomed quite full ; but from the first to the seventh of May, while the pear was in blossom, we had cold weather and some snow, with the ground frozen hard on three successive mornings, and ice made nearly one eighth of an inch thick, which I think killed the young pears, as the blossom leaf turned brown and the pears which had formed dropped off, so that there are but a very few left. Apples blossomed quite full, and have set well, and there is now a prospect of a good yield of fruit, if they do not blast hereafter.

Grapes are badly killed. Most all of the old Catawba, Isabella, and Diana vines are killed to the ground.

Young vines, two and three years old, of the newer kinds, in my little nursery, which were cut back closely last fall and buried about five inches deep with earth, came out this spring in the following condition :

Diana, two years old, killed to three buds.

Clara, two years old, killed to two buds.

Rebecca, two years old, killed to three buds.

Concord, three years old, killed but two or three buds on the end of the shoots.

Herbemont, three years old, killed back to three buds at the bottom of shoots.

Union Village, two years old, killed to one and two buds at the ground.

Delaware, three years old, alive to the ends of the shoots, and looks very finely.

Anna, three years old, alive to the ends of the shoots, and looks well.

Lenoir, three years old, all died to the ground.

To Kalon, two years old, alive to the end of the shoots, and looks well.

Elsingburgh, two years old, alive to the end of the shoots, and looks well.

I have thus given my observations so far, and trust that you will excuse the liberty I have taken, as I suppose your time may be occupied to better purpose than attending to letters like the above, and I have made it pretty long.

Respectfully, your friend,

HENRY L. STEWART.

Middle Haddam, Conn., June 6, 1861.

[We are obliged to you for your notes on the effects of the past winter; they are valuable, and we should be glad to have more of them. In regard to the curculio, the loss of the plum crop unfortunately affords us no immunity, for this pest, in the absence of plums, goes to the pear, apple, and other fruits. The plum would seem to be its first choice; deprived of that, it will attack almost any fruit at hand, as you can now convince yourself by examining your fallen apples and pears, &c., when you will see multitudes of the unmistakable crescent marks. The results in regard to your vines are very nearly those that have reached us from many different sources, the Delaware in every instance coming out entirely uninjured. It remains where we placed it, at the head of the list of all our hardy grapes.—Ed.]

ED. HORTICULTURIST: I am *dreadfully* shocked to find myself in print; have always had a perfect horror of appearing in the papers. In this instance, however, there is one comfort; the public will know that I didn't mean to be published, for my poor letter bears internal evidence of that fact in my request that you would give your answers to "Maggie;" and if you had only given me *that* as a "nomme de plume," it wouldn't have been so bad. "Mais n'importe;" it's a bad wind that blows nobody any good; and I console myself by remembering that the publication of my letter has procured me the counsel and sympathy of other experienced horticulturists beside yourself. Before the March number of the HORTICULTURIST reached me, I received a letter addressed to Mrs. Carrie D. M., and I smiled, as I thought it from some absent-minded correspondent who had forgotten to write the remainder of my name. But on opening it, I found it was from one of whom

I had never heard before, and who in the kindest manner advised me as to what roses to plant and how to treat them. And I feel a presentiment that this circumstance will make this very kind gentleman and myself fast friends for life. And then the very courteous proprietor of the Kentucky Nurseries kindly sent me his opinion about my apple trees, and I think it is correct, because in many instances the bark has blackened where there is no appearance of the borer, and because the diseased part is always on the south side. He says, "The injury is done in winter or early spring. We frequently have warm days in January, February, and March, which start the sap into motion; we then have a storm which ends in a hard freeze, and this congeals the sap which has commenced to flow, causing it to burst its sap vessels. It cannot then either ascend or return, but sours, and causes the place to decay. The remedy is to bind some straw round the trunk in the fall, and let it remain until next season, first removing all the dead bark, and killing all the grubs where there are any; and by putting clay round the dead place, it will grow over more readily. And sometimes the disease is caused in May in very hot weather, when the sap is flowing very freely. The straw will prevent it in either case."

Query, is *this* the blight? I have already had my trees doctored in the way prescribed, and am so thankful that there is any hope of saving these trees. I had given them up. I have quoted this information at such length, because there are perhaps many novices in this part of the Union, (?) where our climate is so changeable, to whom it will be as valuable as to myself. I wish you could procure from this gentleman such articles for your journal, for the benefit of Kentucky horticulturists. It is just such plain, practical information as we beginners need.

You will have to let me write you another letter about the pears and roses, I have strung this out to such a length. And in answer to your many compliments, if you will come over our river to Kentucky, and help me out of my troubles, I will promise you as a reward, if you are a marriageable gentleman, my little daughter, who is quite a young lady now, as much as two or three feet high—*provided* you are all that I think the Editor of the HORTICULTURIST ought to be, and are willing to wait twenty years for her; and for your example will introduce you to the best husband in the world, one who "*has* a soul" even "*larger* than my own." And if you are *not* a marriageable gentleman, I can enjoy your visit the more, without the fear of losing my daughter. Jesting aside, it would be a *real charity* for you to visit this benighted region, for I have no doubt as a consequence Horticulture would receive a new impetus in this section, and we will promise to leave no means untried to make your visit agreeable. You may publish this, or as much of it as you choose. Don't care how many letters I have in the papers now; feel perfectly desperate, as all people do who have lost a good character, since losing mine for *diffidence*.

Kindly and respectfully,

CARRIE D. M.

[Well, Carrie, we were just a little shocked too when we found we had pub-

lished the whole of your letter, but we supposed it was all to be printed; and, in fact, we couldn't help it. How could you send us such a gem, and expect us to hide it in the dark? It is seldom indeed that we have such a shining light for an example to our readers, and we wished to show them, especially our female readers, that woman is never more beautiful than when enlarging her sphere a little outside of the four recognized wooden walls to which many would confine her; that if woman's legitimate sphere is home, that home embraces something more than the rooms within their dwelling. True, we might have suppressed the whole name instead of a part of it; but we mistook "Maggie" for a term of endearment for the magazine. Did you ever see more child-like simplicity than that? Then, again, when somebody says a really good thing, we all want to know *who* says it. On the whole, we think it has all turned out just right; for it has done you good, and the public too. The disease described by your Kentucky friend is what is called the *blight*. The cure he recommends is a good one, but the best *preventive* is to let your trees branch lower down, some two or three feet from the ground. This is a good plan, indeed, not only for your part of the Union, but for all parts of it, and especially for novices. Certainly, write us all about your Pears and Roses, and we will do all we can for you.—And now for the little daughter. We have made up our mind, and the thing is done; we are bound to go to Kentucky, and you and our little love of a lady shall see whether we do not come up to the *provisions*. Twenty years! they will glide swiftly by, and seem like nothing, for the love we bear her. Bless the little soul, we send her a thousand kisses. We'll have a nice time when we come to Kentucky. We hope she'll say, like little Johnny Grant, "Well, father, there's something worth living for when Mr. Mead comes, ain't there?" And then, too, we are to be introduced to the best husband in the world, who has a larger soul than your own. Tell him to be prepared for a hearty embrace; for, next to a woman, we do love a man with a big soul. We are impatient to be off; for with you, your husband, and our "little love," we can see nothing but the purest enjoyment.—So you see, Carrie, we have taken you at your word, and published most of your letter; but you have no reason to feel desperate while engaged in doing a good deed. The other Carrie you allude to has returned home, and will pick up no more chinquapins in Mississippi: the climate was too much for her husband's health. She is a sweet girl, and we had another good time when she came back. And so closes our chat for the present.—Ed.]







RUFENSWOOD PEER
for THE HOME GARDENIST.
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Hints on Grape Culture.—VI.



HE plan which we have laid down now brings us to that part of our subject which treats of the *Best Time to Plant*. As with many other parts of grape culture, so here, there is some diversity of opinion, even among practical men. This diversity can be readily accounted for, and is of no serious moment, except as it begets doubts in the mind of the novice. We do not purpose examining this diversity at present, or attempting to reconcile the opinions of others; that we shall leave for another occasion. We shall now, as heretofore, simply give the results of our own experience. We may say, however, that parties are pretty equally divided between spring and fall planting. Each has its advantages and disadvantages, but with us the advantages have, on the whole, been greatly in favor of fall planting. Something is due to the soil and its condition; but we take it for granted that the soil has been prepared as we have directed, and we therefore admit of no exception in case of a heavy soil. Let us look for a moment at some of the reasons for preferring fall planting. The buds of the vine in the fall are firm, and the whole vine in better condition for handling, and consequently receives less injury from the rough usage of careless men. In the spring, on the contrary, the buds are usually soft at planting-time, and easily injured. The first warm weather starts them from their winter sleep, and a slight knock either breaks them off, or bruises them so as to impair their vitality. If bruised, the growth is feeble; if knocked off, we have to depend upon a secondary bud, which is not always present; in either case we have lost the primary vigor of the plant. By planting in the fall, these casualties may be mostly avoided; the vine is then in all respects in better condition to bear the shock of removal; we may rely with much certainty upon having the primary buds intact, and a consequently strong growth is thereby insured. The difference between a primary bud and a secondary, or an injured one, is very often the difference between a whole season's growth.

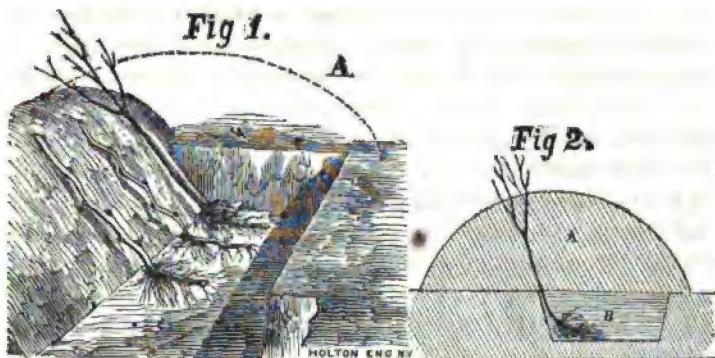
Thus much for the top of the vine. As to the roots, we think a vine may be lifted and sent a long distance with much less injury in the fall than in the spring. The hygrometric condition of the atmosphere is more favorable; the vine has prepared itself for its winter rest, and is less affected by atmospheric changes; a warm day will not stimulate its buds; it is all prepared for its long winter sleep, and only needs that a suitable bed be prepared, where it may repose till the genial warmth of spring shall wake it into activity again. There is still considerable warmth in the ground, and if the planting is done early, the roots readily adapt themselves to their new abode, and the vine is in all respects in good condition for renewed growth in the spring. In the fall, too, we usually have more leisure

for planting, and are therefore less tempted to hasten the work and do it imperfectly. Even if all these advantages in favor of fall planting did not exist, we should greatly prefer buying in the fall, because of the certainty of getting vines in better condition, and the incalculable advantage of having them at hand when wanted, and entirely under control as respects handling, and consequent safety from injury to buds and roots. In the spring, the pressure of work is very great; orders are apt to be sent late, and tardily executed, and the vines come to hand in bad condition, the buds being started, and the roots bruised and dried, and in the hurry of the moment the vines are carelessly planted. Often the bundle remains unopened for days; and as the vines are soon to be planted, it is thought unnecessary to heel them in, and the injury thus caused is productive of much disappointment, and not unfrequent grumbling at nurserymen for sending "such poor vines." The vine, however, is of such native vigor, and so tenacious of life, that even the most adverse circumstances often fail to subdue the living principle within it; and thus it is that it survives shocks of violence that would destroy most other plants. If the vines are received early and in good condition, and are properly cared for and planted, the objections to spring planting are greatly lessened; but this is not often the case; and the risks run are always so much greater in spring than fall, that we do not hesitate to recommend fall as decidedly the best time for planting the vine. If the ground is not prepared, or any reason exists to prevent planting in the fall, then purchase the vines in the fall, and heel them in.

If vines are in pots, they may be planted almost any time. Some nurserymen lift their vines in the fall, and keep them in sand in a cool cellar during the winter, and this all should do who have the convenience; they are thus in good condition for spring sales; but the careless handling of indifferent workmen often more than neutralizes all the manifest advantages of thus keeping the vines during the winter.

We have said that vines should be at least purchased if not planted in the fall, and "heeled in." This is a professional term which many of our readers may not understand. It consists simply in laying plants close together in a trench, and covering the roots with soil; a very important aid to the gardener in all kinds of planting. If plants are "heeled in" in the spring, the roots alone may be covered; if in the fall, to remain during the winter, the tops as well as the roots may be covered, or the roots only, according to the kind of plant. We shall describe what is best for vines. These may be heeled in either in a cellar or in the open air. If in a cellar, it should be cool, and the roots covered with pure sand or gravel—damp, but not wet. Earth is not so good as sand, because it is liable to become mouldy in a cellar, and the mould will injure the roots of the vine. The tops will need no covering. If the vines are kept out of doors, a dry spot should be selected, and if the soil is light or sandy, so much the better; if not, it should be made so, since there are serious objections to heeling in plants in a heavy,

tenacious soil, unless well drained. If convenient, a sheltered spot should be selected on a gentle slope, so that all surplus water may be carried off; the shelter in this case is of less moment than the accumulation of water about the roots, which should be carefully provided against. A trench should be opened, and the soil all thrown on one side, in the form of an embankment, as shown in figure 1.



The vines may then be laid in the trench, close together, and covered with soil, rounding it off so as to shed water, as shown in figure 2. The trench may be made of any length, or trenches may be made parallel to, and near each other. In the latter case, the earth removed in making the second trench, may be used in covering the plants in the first, and so on. If the vines have been pruned, the whole tops should be covered; otherwise a portion may be left exposed. The vines are to be laid in trenches at an angle of 45° or less, and not upright. If it is thought too much trouble to cover the tops with earth, fine brush may be used for this purpose; but manure, or any thing else likely to accumulate heat or moisture, must not come in contact with any part of the plant while thus heeled in: a mistake very often made, and with disastrous results. Early in the spring the covering should be removed from the tops; and when the time for planting arrives, the vines should be taken out a few at a time, and the roots as little as possible exposed to the air, as heretofore insisted upon.

Vines thus treated will keep well during the winter, and be in good condition to plant in the spring. They may be pruned when heeled in, or at the time of planting. Our next will probably treat of the *Best Kinds to Plant.*

LANDSCAPE ADORNMENT, No. XIV.—APPROPRIATION.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

THE appropriation of all that is beautiful in adjoining or distant scenery is undoubtedly a self-evident right of the landscape artist; and as the hill and valley views, the broad river, or the distant mountain, are considered among the impor-

tant charms of a country home, improvements should be so managed that they occupy their true and proper position in the real aerial perspective picture. The three gradations of color or indistinctness which characterize every extended landscape scene should be well considered, and plantations so managed as either to perfect or cover up those views that are defective.

There is, perhaps, no finer mode of treating an estate commanding middle and far-off views than by appropriating them; and where the opportunity is presented its development forms one of the most captivating pleasures of landscape embellishment.

We have often heard expressed the great difficulty in planting a place understandingly, that is, with some meaning or object beyond the mere beauty or proportion of a tree, considered independent of all accessories. Should all things relating to artistic planting be carefully comprehended, so many new suggestions would arise as to make all difficulties vanish. The creation and perfecting of real scenery is one object of landscape gardening, and where planting embraces appropriation, the concealment of boundaries and undesirable objects, opening perspective vistas, artistic grouping, and the development of single independent specimens, one should hardly feel at a loss what to do or where to begin.

No picture is considered complete that has not the three gradations of foreground, middle, and third distance; it is quite essential, therefore, that these be understood in all studies of aerial perspective, as a different character can be given to each prospect. The size of a place has but little to do with the apparent size that can be made, only that it be not less than five acres, and its locality properly selected. We will then suppose that the landscape engineering has been done; that is, the roads, walks, and grading finished; drainage, bridges, ornamental lakes, entrances, and subdivisions of ground completed, or the well-studied plan so managed that portions be finished at once, and all other portions, when joined at any future time, shall harmonize with each other and as a whole; we are then ready to cut out or plant up our vistas and pictures. To give extent, concealment of boundary fences and division lines is necessary, and this can be done in several ways, as by the sunken fence or ha! ha! by close thickets of shrubbery, at a proper distance by the wire fence, or in some cases between agreeable neighbors by the omission of an apparent division line. The rolling character of the ground will often conceal boundaries without the assistance of art. Disagreeable features of the landscape should also be concealed from the prominent points of view, and broad stretches of monotonous scenery broken up or divided.

To open a vista artistically is a skilful matter, and requires much careful study; it should not be managed experimentally, but reveal only those features that are desirable: the cutting of a single tree or bough more than should have been done may spoil the picture. Some of the practical principles of engineering are requisite to mark it out and fix precisely the limits. It is not possible to cut

through thick groves or belts in precisely the required direction without some guide. A line should first be run out from the place of view about or as near as possible in the direction of the point which is to be the centre of the distant view; this line of reconnoisance is then used as a base line to adjust the true centre line of the proposed vista; by alternately ranging three light rods, a straight line can be run any reasonable distance. If from the top of the house or any high elevation overlooking the trees the bearing of a vista can be taken with a compass, the working line can be laid out on the ground at once.

It sometimes becomes necessary, in the formation of pictorial vistas, to create the middle distance; thus, in overlooking a valley, we get only the foreground and the far distance, and the middle one must then immediately follow the first one. The effect of the atmosphere is to neutralize the color of objects as they recede from the spectator; what is positively green at one's feet, is blue, or purple, or gray on the distant horizon, and between the two extremes there is a uniform gradation. All objects become more and more indistinct as they recede from the foreground; the sharp, clear outline of trees, and the fine finish of a road or lawn, fade gradually away as the distance increases. Among the different species of trees are to be found nearly all the gradations of color that are required in the aerial perspective picture, and by a judicious use of them those parts that are wanting may be supplied. If it becomes necessary to make the middle distance within the inclosure, or within moderate limits, then the foreground trees should be of warm, rich greens, and those intended for the second distance of negative or colder colors. The second distance then planted immediately succeeding the first, is in this manner made apparently to occupy its proper intervening position between the two others. It must be remembered that a vista all planted with positively colored trees, such as the maple or hickory, will naturally present the three gradations of distance; if it is all planted with trees having neutral tints, the effect is the same; but if the middle distance be composed of positive colors, and the foreground of negative colors, the appearance of extent is destroyed. If the foreground be of positive colors, and the middle distance of negative colors, then extent is gained in the same proportion that would be required to neutralize a positive color to such neutral colors as are used, the last apparent distance being added to the real distance. In this manner a middle distance may be planted immediately succeeding the foreground, and yet shall appear in its true place, and fill up and present a true picture.

“To make the landscape grateful to the sight,
Three points of distance always should unite.”

Color alone does not constitute all of aerial perspective. The eye should be gradually carried down the distance by passing from point to point; from a prominent group on one side to one not quite so prominent on the other, as in a broad ocean view the eye is led from the top of one vessel's mast to each suc-

cessive one more distant. Perspective by finish, or a gradual departure from the polished scenery by the house to bold picturesque forms, must also be considered. There is no effect in any finely finished work placed at a distance; a picture, a statue, architectural embellishments, &c., fail in distant effect if they are not strongly and boldly defined. The high finish of a landscape should never be carried into the middle distance; the foreground is the place for that; the finished picture, the fine effect, presumes upon a gradual blending from a high polish to nature left alone.

THE CULTURE OF THE CARNATION.—I.

BY AN OLD COUNTRYMAN.

I AM glad to see, Mr. Editor, that you have lately taken hold of Florists' flowers in the pages of the HORTICULTURIST.

The articles of Mr. Richardson on the Dahlia, and of Mr. Barker on the Poly-anthus, both flowers old and long-loved favorites of mine, induce me to think that a few remarks on the Carnation from an old amateur may not be unacceptable.

The uninitiated should be first informed that Carnations are, by the old Florists, divided into three classes, namely, *Bizarres*, *Flakes*, and *Self-colored*. The *Bizarres* are those which have two or more colors, in addition to the white or ground color, running in stripes through their petals. The *Flakes* are those which have but one color only besides white running in a similar way. The *Selfs* are those which are of one color only. There are crimson, purple, and scarlet *Bizarres*; purple, scarlet, and rose *Flakes*; and white, pink, purple, and crimson *Selfs*.

Then, there are Picotee Carnations, which differ from the former in the markings of their flowers, which consist in edgings or lacings of one or more colors running round the edges only of their petals, the remainder of which are either white or yellow.

The above embrace nearly, if not quite, all the varieties of Carnations that were held in estimation by the most celebrated Carnation growers. Of late years various other nondescript varieties have been originated on the Continent of Europe, which, however, have found little favor with the "knowing ones" of the fancy, as their want of the primary requisite of a snow white ground color has condemned them to the florist's eye. When well grown, a Carnation bloom should never be less than three inches in diameter. Many varieties may be produced over four inches. The center or crown of the flower should be prominent and well filled with petals. The ground color pure, clear, and free from spots, and the edges of the petals smooth and without notches.

To grow Carnations in perfection they are best in pots. The soil or compost should be one half good loam and one half old stable manure. To this a small

portion of sand or road grit may be added. The top spit of a pasture, turf and all, and a quantity of stable manure heaped up in alternate layers of equal thickness about this time of the year, and left standing through the next winter, will in the spring, if cut down and thoroughly turned over, be fit for use.

Carnations may be purchased at the nurseries either in the fall or in the spring. At these times they are in small pots ; and if obtained in the fall, they should be kept in the same pots in a common garden frame through the winter. During severe frost the lights should be kept shut, but whenever the temperature is above the freezing point air should be admitted by lifting the light a few inches. It is best to plunge the pots in ashes or saw-dust, and but very little water will be required from November until March. Damp is the thing to guard against at that season ; and if any blue or black spots show themselves on the leaves, too much moisture at the root is the cause of it, and withholding water the remedy, with plenty of air.

The beginning of April the plants must be placed in their blooming pots. These should be ten or twelve inches in diameter, and each pot will take four plants. First enlarge the drainage hole at the bottom of the pot to double the size it is usually made. Then place two or three pieces of broken potsherd over the hole, and upon these some of the coarsest part of the compost, which should be used from the heap in its rough state, as thrown together by the spade, without sifting. As before remarked, a little sand or road sweepings may be mixed with it, especially if the loam is of a stiff or clayey nature.

The large pot being filled about half full with the compost, press it down moderately with the hand, or by striking the bottom of the pot on the ground. This is to prevent too great a settlement of the contents of the pot after the plants are placed in it. Then turn the young plants carefully out of the small pots without breaking their ball of roots, and place them in the large pot so that their lower leaves will be about half an inch below the level of the edge of the pot. Fill up carefully about the plants with compost, and the operation is complete.

The compost should, during the winter, be kept covered over to prevent its being saturated with water by storms, or, what is better, be placed in an open shed, where, while protected from wet, it is benefited by exposure to frost. Therefore, when used in potting, the compost should be only moderately moist and crumble readily in the hand. This is essential to prevent its becoming too close in texture in the pots to admit the ready ramification of the roots (which will now grow rapidly) through it.

After potting, the plants should be watered, and then placed again in the garden frame. Until the middle of May, all that will be necessary will be free admission of air daily, and water if necessary ; but in all probability for the first month after potting that will not be required.

By the middle of May, or earlier if the weather is mild, the pots should be placed out of doors, where, without having the full force of a mid-day sun, they can get it

nevertheless, either morning or afternoon. Protect the sides of the pots from the sun but do *not* plunge them.

As the flower stems rise, sticks must be supplied to support them; and as heat increases, more water will be requisite.

When the flower buds, or "pods," as florists call them, have filled out well, so as to be nearly of equal size throughout their whole length, a piece of bast matting or thread may be tied round the pod about the middle to prevent its bursting at the side, (which accident would disqualify the flower for exhibition;) and as soon as the color shows by the protrusion of the petals at the end of the bud, if it is wished to have the bloom protected, a cap must be placed over it, or the pot must be placed under an awning.

Those who make a specialty of Florists' flowers usually have an awning made of muslin or canvass, supported on a wooden frame, to cover their Tulip bed; and as the Tulips have been removed before the Carnations come into bloom, this serves the efficient purpose of protecting the Carnations. Those who have seen a collection of one or two hundred pots of Carnations in full bloom, arranged on either side under the awning, with a walk up the center, will not easily forget the gratification either to their eyes or to their olfactory nerves.

Assuming the amateur enthusiastic enough to establish such a collection, and thus protected in their blooming season, let me recommend him to water the plants when in bloom moderately; to keep the sun off by the awning; to admit air liberally at the sides; and, above all, to keep the ground under the awning damp by sprinkling from the watering pot, repeated frequently during the day, so as to keep a moist atmosphere around the plants, which will be the means of preserving the bloom much longer in perfection.

(To be continued.)

[Florists' flowers have, on the whole, been too much neglected among us; and any thing which will tend to make them more widely known, and their habits and treatment better understood, will be peculiarly welcome. "An Old Countryman's" remarks on the culture of the Carnation are timely and valuable. The Carnation we know to be one of his special favorites; indeed, it is every body's favorite, and a man feels happy, if ever, when some lovely Emma or Carrie tenderly places a Carnation in his bosom.—Ed.]

AN HOUR IN THE VINEYARD.

BY JOHN S. REID, FAYETTE CO., INDIANA.

HAVING opened the *Horticulturist* for June, and examined some of the valuable articles therein, Mercury, my old mentor, hinted the propriety of spending another hour in the vineyard for 1861. How changed is the scene and the times

from those in which I penned my last "Hour;" for then, the beautiful valley in which I reside was calm and peaceful as a "summer's lake;" now the sound of martial music and the mustering of armies are heard all around me. From many a house, and battlement, if I may use the expression, the "stars and stripes" float in the balmy breeze; so that, although Man may feel and act the warrior, Nature smiles in peace over all her works.

But let us talk of the vineyard, and the young vine. This is the season here, when the air is fragrant with the blossom of the vine; and although many of your correspondents seem to indulge their fancy in hunting for, and eulogizing *new* vines, from the Delaware down to the latest one unchristened and unnamed, I for one love to spend a few passing hours with my old favorites and old friends, the Isbellas and Catawbas, whose shade has so often sheltered me from the summer's sun, and whose luscious fruit has so frequently added a finer relish to the pleasures of life. I regret, my dear editor, that you do not live within a hundred miles of the vineyard, and that there is no railroad line stretching its iron rails from our humble home to your city palace; for if there were, then you might enjoy with me in the summer's eve, a goblet of the juice of the grape, more luscious and more nutritious than Byron's "Hock and Soda Water."

But I am wandering from my subject, and make all apologies for the digression.

My residence is in about the fourth parallel of north latitude, on the bank of the White Water, and my vineyard is situated on a small mound, which some antiquarians think was the work of the Mound Builders of the West. Be this as it may, a thousand years must have passed over its summit since the first handful of earth was thrown upon it; for the mouldering remains of majestic oaks and stately walnuts attest the fact; while the red man's traditions afford no clew to the abode of the original builder.

Situated, as I before stated, in the 40th parallel, I wish to inform you and your countless readers, the effects of the late winter on my orchard and vineyard.

The mercury seldom fell below zero last season, although for a few days at separate times it went as low as 10° below this point; but I find no injury done to the vine, of which I have some forty varieties. The fruit buds opened beautifully in spring, and the rich blossom holds out the prospect of an abundant vintage. Growing side by side, I have the Catawba, Isabella, Diana, Clinton, Madeira, Concord, and White Fox, not one of which has, so far, shown the least signs of mildew, blight, or any other disease, but each and all are full of embryo clusters of grapes. I have the Delaware, El Passo, Anna, Rebecca, Clara, Herbeumont, and Union Village, doing well for young vines; with a vine called the "Wellington," which I received from Canada, whose bunches are reported to average three pounds each, making excellent growth. All of these, during the winter, I covered with leaves and earth, to protect them from the cold, so that when I opened the border in spring, they were all alive and ready for action.

Having tried patiently for several years the culture of the European wine-

grape in the open air, I am forced to acknowledge it a failure, and the vines worthless for this latitude.

My plum and peach trees are full of fruit, and what is strange, I have seen but one curculio this season up to date. Strawberries abundant to satiety; raspberries and blackberries, prospect extremely good, and gooseberries and currants more than abundant.

My apple and pear orchard is too young to bear this season, but the blossom is rich and profuse; so that of all my fruits, the cherry is the only failure.

Your beautiful plate of the "Anna" in the June number, I much admire, and having a seedling grape of my own, which I named the "Anna" some year or two before I heard of the one you refer to, I will watch *their* development with much care and attention; and as I have several seedlings that should fruit next season, should we survive the war, and the UNION be sustained, I may pass another hour in the vineyard, and report the result of our labors.

Although an amateur in Horticulture, I am thought much of an enthusiast in grape vines. I have been searching for some time for a white or yellow grape, equal in size and quality to the Sweet Water, and for such have offered premiums through our Agricultural Society, but found no *native grape* of a similar quality and size.

Nor could I find a black or blue grape, equal in size and superior in quality to the Catawba; and if any of your readers have either a white, yellow, or red, or blue grape that will fill the bill, I will be glad to have specimens sent to my address, per express, at my expense, and a reciprocation of favors will follow.

I have some seedlings that show excellent indications of valuable fruit, but until next season nothing *certain* can be ascertained. I look upon the Delaware as one of our most excellent of grapes, but the size of the bunch and berry is not so large as is wanted; and so far as my experience goes, it is not a strong growing vine. My "Anna" is a strong grower; berry, white but small; leaf, five-lobed; not tomentose in excess, but like the Black Hamburg when young, and getting coarser with age; vine, five years old from the seed last season.

Wishing a long life and happy exit, through a vale of roses whose leaves are dipped in the otto of the wine, I subscribe myself your friend.

[You have enjoyed an immunity, in respect to your Isabellas and Catawbas, which very few can boast of. Yours is almost a solitary instance, and must be owing to something peculiarly favorable in your position or locality. We do not wonder, therefore, that you can pass an "hour" so pleasantly in your vineyard; we wish we were near enough by to enjoy it with you. With only 10° below zero, you had not much to fear: here we registered 30° below. We should be delighted to see one of those *three*-pound bunches. Can you send us the name of your Canadian friend? Your experience with the European grape has been that of all others who have attempted its growth. Plenty of peaches, plums, straw-

berries, blackberries, &c., and only *one* curculio! Surely you must be living in a land of promise. We think there can be no doubt of your passing another "Hour in the Vineyard," and shall therefore hope to have the pleasure of seeing your seedlings. In the meantime, since we have one Anna, we would suggest that you change the name of yours to Emma, or some other pretty name, provided the grape proves to be sufficiently good. We think Allen's Hybrid will fully answer, and even exceed the requirements of your prize grape. We prefer both the Anna and the Cuyahoga to the Sweetwater. You may expect to get some grapes in the fall that will satisfy you on both points. The Delaware is not a coarse grower, but we think it is fully entitled to be called a strong grower; a feeble growing vine will certainly not bear the extremes which the Delaware is known to endure with impunity. We reciprocate heartily all your good wishes. Speak oftener, so that we may become more and more familiar with the sound of your voice.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY.

THE Brooklyn Society held its Second Conversational Meeting and Exhibition at the Athenaeum on Tuesday evening, July 16th, and we are glad to learn that it surpassed the first in point of interest and attendance. The evening was rainy, and prevented some from showing their plants, but there was nevertheless quite a number of very fine plants on the tables. We are indebted to the Corresponding Secretary, Mr. Miller, for an account of what was said and done.

Mr. Hamlyn, gardener to W. C. Langley, Esq., exhibited beautiful specimens of the Stanwick and Boston Nectarine, taken from plants four years old, grown in tubs. We have since seen these trees and others, and must say that they reflect great credit on Mr. Hamlyn's skill and good management. Mr. Humphreys exhibited a remarkably fine Screw Pine, a Sago Palm, Fuchsias, Begonias, Dracænas, Caladiums, Marantas, Double Hollyhocks, Verbenas, Bouquets, etc. Mr. Brophy exhibited Seedling Pansies and hot-house Grapes. Mr. Burgess exhibited his new Dwarf Digitalis, or Fox Glove, and another seedling, with the flowers disposed around the stalk. He had also a plant of Daphne cneorum, one of the finest hardy evergreen border plants we have; the bloom is nearly constant and very fragrant.

President Degrauw called the meeting to order, and introduced Mr. Pardee of New York, who, in his usual felicitous manner, made some interesting remarks on the advantages of such meetings, and urged the members to make them a mutual benefit to the gardeners and the amateurs, by asking questions on subjects in regard to which they wished for information. He urged the Society to prepare a list of subjects, to ask questions on which would suggest to many the want of information on such subjects.

Mr. Brophy asked for the best method of striking roses from cuttings, saying that formerly his gardener was very successful, but latterly had not been. He wanted the information, and it might be useful to others.

Mr. Fuller, in reply, explained the method of Messrs. Dailedouse and Zeller, among the most successful rose-growers in the country, for hardy, out-door roses. They take the cuttings in the fall, and put them in ordinary good soil, in a bed where they can be covered by a sash, and leave them till spring, when most of them will be rooted, and ready to plant out as soon as the ground is suitable. For pot roses in green-houses they take the cuttings in the spring, and strike them in sand in the green-house; they grow very easily. He said that if plants, and particularly all hardy plants, be taken up in the fall and potted, and kept in the green-house till spring, the cuttings from them will root much quicker than from open air plants. The tree peony can be grown readily from cuttings in this way, and so with many other plants which are hard to propagate.

Mr. Fuller then remarked that he had a word to say to the gardeners, and that was, if they knew of a better way of growing a certain plant or flower, it was their duty to let the public know how to do it. What would the gardeners of the present day know of gardening, had past generations kept all they knew to themselves? There is no one who can not learn and impart information, and this is the place to do it. If one gardener knows how to grow Dahlias, or Roses, or Pinks better than any body else, let him tell his plan; and then he might, in return, get a suggestion which would still further improve his method.

Mr. Pardee urged the gardeners to look at it in that light, for they might tell a hundred persons just how they prepared the soil, and how they treated a plant, but not two out of the hundred would follow the directions exactly. They would vary a little, and so not come up to the standard of the gardener.

Mr. Brophy made some interesting remarks on the history and cultivation of the Pansy. He also gave an excellent account of his houses, and the difficulties of growing grapes under glass, and told how to obviate them.

Mr. Burgess, East New York, gave an account of his new Dwarf Digitalis, raised from seed; also another new variety, which is very fine, and has the flowers all around the stalk instead of on one side.

Mr. Hamlyn explained his method of growing Nectarines under glass, in which he has been very successful. He also gave an account of his mode of forcing grapes in pots. He grows all his grapes for forcing in large pots, and in fifteen months from the cutting, he has them in full bearing; and as soon as they are over, throws them away, and starts new ones in the same pots. By keeping up a succession he always has plenty, and in much less time than by the ordinary way.

Mr. Pardee said this surpassed any thing he had known of grape culture. He related how Dr. Grant, of Iona, planted a vine, and the astonishing growth it had made. He dug a hole two feet square, and eighteen inches deep; then put in

about three inches of pure surface soil, spread the roots all carefully out as they were grown, and then put on three inches more of this surface soil; on that about three inches of real good stable manure, and then three inches of ordinary garden soil. This left it about three inches below the ordinary level to collect the rains and nourish it. It has now grown over six feet since the first of June, and has two fine bunches of fruit. Such is the result of knowing *how* to do it; and it is just this kind of information that all want, and by attending these meetings of the Society all are encouraged to persevere.

Mr. Brophy proposed a vote of thanks to Mr. Pardee for his excellent suggestions and attendance at the meetings, which was unanimously passed. After which they adjourned to meet again on the first Tuesday in August at the same place.

We are really much pleased to see these Conversational Meetings fairly inaugurated. If faithfully persevered in, they will diffuse a great deal of valuable information, and give the Society a character for usefulness as well as show. They are now doing what we urged them to do some five years ago; and we can not help thinking that they have, in some sense, squandered five years of valuable time. Let them now concentrate their energies, and make up for it.

PHENOMENA IN THE CROSS-BREEDING OF PLANTS.

We have lately published something on Hybridizing Plants, a subject of peculiar interest in whatever light viewed. The following interesting article is by Mr. D. Beaton, an old veteran, at present at the head of "hybridizers" in England. The article is taken from the London *Journal of Horticulture and Cottage Gardener* for May 14, 1861. Mr. Darwin receives but little comfort for his peculiar theory.

"HAVING received the following letter from Mr. Darwin, we forwarded it to Mr. Beaton, and now publish it with his reply.

"Will Mr. Beaton, who has made such a multitude of most interesting observations on the propagation of plants, have the kindness to state whether varieties of the same species of Composite plants frequently cross each other by insect agency or other means? For instance, will any of the Cinerarias, if kept apart from other varieties, breed true? but if standing near other varieties, will they generally, or almost certainly, produce a much greater diversity of colored seedlings?

"I saw an allusion by Mr. Beaton to this subject in THE COTTAGE GARDENER of last year with respect to Zinnias; and from this allusion I infer that Zinnia sports much when kept separate.

"As I am begging for information on the natural crossing of plants, I will likewise venture to inquire whether the great raisers of Hollyhocks find it necessary to keep each variety far separate from the others for raising seed. The late famous horticulturist, the Hon. and Rev. W. Herbert, when I visited him at Spofforth many years ago, remarked that he was much surprised (considering the structure of the flower and the relative periods of maturity of the pollen and stigma) how true some sorts of Hollyhocks bred, even when growing close to other varieties. I have found this to be the case with some of the varieties, and can not understand how it is possible. Mr. Beaton might, if he pleased, write an article, very valuable to physiological botanists and of some practical utility, on the natural crossing of varieties. He might indicate in which genera crossing most commonly occurred, and in which it seldom or never occurred. For instance, I have observed Sweet Peas during several years, and believe that they never cross; and it is not easy to make an artificial cross, though I succeeded at last, but got no good in a horticultural point of view.—CHARLES DARWIN, *Down, Bromley, Kent.*'

"I am not aware that any two species of Composite plants under cultivation have ever been crossed by man, or through the agency of insects. Mr. Penny, who first broke down Cineraria cruenta in the Messrs. Young's nursery at Epsom, said he got it to cross with another species, I think, from Teneriffe. It is more in accordance with the experience of cross-breeders, however, that superior cultivation induced the disposition to vary, as in the Dahlia. The Swan River Daisy, Brachycome iberidifolia, is the last instance we have of this in the garden; while Zinnia is the last variable Composite plant that has been turned into double flowers, so called. This last change is said to have been effected in India; and if it is really so, the effect may be ascribed to climate more than to high cultivation. We know the Port Natal Gladiolus (*natalensis* or *psittacinus*) could not be crossed here, or on the Continent, with any of the old Cape species or their seedlings; but in Australia, at Sydney, the cross was easily effected, *Gandavensis* being the first seedling of that cross; but as soon as that cross got into the hands of European cultivators they experienced no more difficulty in pushing on their crosses in the strain of *natalensis*. These are three recent instances of the undoubtedly influence of cultivation and climate over genuine wild species. For the first seven or eight years of high cultivation the Swan River Daisy kept to its original colors—blue and white—then varied into lilac and purple and minor shades. When a flower or species thus varies from the effects of cultivation or climate, the variation is also variable in degree. Some of the varieties reproduce themselves quite true from seed from the first; others, on the contrary, take some years before the color or habit is 'fixed,' as gardeners say when a variable plant comes true from seeds after sporting for some years; and some never get fixed, or have not done so yet, and Zinnia is an instance of it. In all these instances some people attribute the changes to cross-fertilization; they have been crossing

their flowers, and they have seen results, and account for them that way, deceiving themselves. But those who have studied and experimented on the effect of cross-breeding, as against the results of the effects of climate and cultivation, have long since arrived at the conclusion that crossing has no power on fixing any two plants which naturally sport; that is to say, on fixing a seedling from their union combining so much of the qualities of each of the parents as is generally the case when two permanent kinds or species, which always reproduce themselves or their like, are united. That conclusion strikes at the root of the fallacy which obtains in respect to the best means of improving all our domestic fruits; and yet crossing is an element of great value in improving flowers and fruit, which seems a contradiction, but is explained thus: Some seedlings from plants that have been crossed for a generation come quite true from seeds, some half true, and some on which no reliance whatever can be placed, or, in our language, they always sport from seed. On those which this sport-crossing has no effect—such, however, as come half true and half sport-crossing—there is a chance of an intermediate condition, and those merest varieties which come true from seeds crossing is just as effectual with them as with two genuine wild species. One would think therefore, there were no natural limits or difference between a species and a permanent variety; that is, one which comes true from seed, like the large-flowering variety of the Mignonette. In practice there is no landmark whatever between such a variety and a wild species. The garden Cinerarias are sporting plants as much as the Dahlia, yet among a thousand seedlings of each, one may turn up which will come half true from seeds, and when one finds such a seedling in any of the sporting families of common plants he keeps it for a breeder, even if it were the worst-looking in a large batch of seedlings. The way with Cinerarias more than with most plants is this—by a careful selection of kinds under high cultivation one gets a superior strain, as we say, or superior flowers, which, although they will not come true from seed, will produce more good seedlings, or less bad ones, than an inferior strain: therefore, if a good flower or good strain of Cineraria is exposed to the pollen or influence of a bad strain, the good breed is immediately deteriorated in the sporting offspring. I am not aware that any of the garden Cinerarias come true from seeds, or if any of them could now be crossed with the nearest wild species. The only Composite flower on which I ever spent time is Dahlia scapigera, the pretty little dwarf Dahlia with small shining foliage, and I think I can venture to assert that in our climate it is impossible to cross it with any of the garden Dahlias. It is just the same among Primulas; notwithstanding the freedom with which Auriculas and Polyanthus will sport among themselves, you can not drive a seedling from all their races by the pollen of their nearest kindreds. When Primula Palinuri and sinensis, which were introduced the same year, (1816,) came into general cultivation, I was initiated into the mystery of crossing flowers, and these two were of the number which raised the hopes of the cross-breeders, particularly Palinuri, which, to a common

observer, is nothing beyond a huge Auricula ; but none of the wild species of Primula would touch each other or the garden varieties. Then you see no end of sport seedlings in the Dahlia and in the Primula, in two distinct species of Primula and two botanical species of Dahlia ; and yet the rest of their families obstinately hold aloof from each other, and from the sports of their respective kinds.

"The old Hollyhocks, or some of them, were fixed varieties ; but whether they were so fixed from the first, or induced to fix by a long course of culture by propagation of the roots, we do not know, but the fact is well known that some of the old kinds would come true from seeds. A long course of one uniform culture renders some plants barren altogether, as Crocuses, and a long period of years intervened between the birth of some seedlings and their coming to the age of puberty—to the age of producing seeds, although they may have flowered from the second or third year from the seed. *Ribes sanguineum* flowered six or seven years before it began to seed ; and Dr. Herbert records an instance in which a certain seedling bulb flowered fourteen years before it produced pollen or would seed.

"The relative periods of 'maturity of the pollen and stigma,' seems to have been a wise law from the beginning for the preservation of the kinds of plants in their generations, for there is not a flower in a thousand that is fertilized by its own immediate pollen. The pollen is in advance of the stigma in the great mass of flowers, and the pollen from another flower on the same or neighboring stalk is the fertilizer. And here another wise law is in operation : When the stigma is ripe it is exposed to the influence of the pollen of all the plants of its own kind which may be growing near it ; and the law is, that the pollen of the flower, or of the plant which is the strongest or best developed, takes the lead in fertilizing the stigma, and at the same time is able to neutralize any effects that may have been produced by an inferior pollen, or pollen from a weaker flower or sickly or stunted plant—a thing which can be proved any day in the summer by dusting the stigma with its own and sundry pollen, when one kind of pollen only will take effect. And that proves two things in addition to the proof that the best pollen takes the lead—proves superfecundation to be impossible, and also proves that the ideas of physiologists are not according to Nature as to the progress of the pollen to the ovary. They say that pollen passes through tubes of extreme tenuity to the ovules. If that were so, and more than one stigma supplied the necessary passage, more than one kind of pollen might find access to the ovules, and more kinds than enough would fertilize the embryo seeds, and superfecundation would necessarily result.

"In the instance mentioned by Mr. Darwin of Sweet Peas never crossing, they belong to a class of flowers every one of which must, of necessity, be fertilized by its own pollen in the great majority of instances. The carina, or keel, or lower petal in pea-shaped flowers is, in reality, two petals joined at the edges. The joining is the keel ; the ends of these two petals lap over or fold into each

other, forming the imaginary bow of the boat; the stamens and the pistil are compressed within the folds forming the bow, and fertilization is effected in the dark, and the stigma is perfectly safe from the intrusion of foreign pollen: therefore, no garden Pea can be naturally crossed more than a Sweet Pea, unless, indeed, a strong bee with other pollen on his legs has been struggling to get at the nectar in the stern of the boat. Some of the varieties of the garden Pea may be crosses resulting from a struggle of that kind, but the great majority of them are the results of the sporting tendencies of the plant itself. This is the true cryptogama of Nature, of which, however, there are many more perfect instances. The great bulk of the order of Bellworts, or Campanulas, are real cryptogams; their fertilization is effected in the dark before the flower expands; but the Wheat might be said to be the most complete cryptogam of all the common plants. No kind of Wheat has ever been naturally crossed, and never can be. When the Royal Agricultural Society talk about the Wheat being in blossom, they are just one month behind Nature. But what they and the bulk of the country people take for the flowering of the Wheat, is one of the most beautiful contrivances in Nature as means to an end, a departure from the law of Nature as it were, to preserve food for man. The Wheat is in full flower, and the seed is fertilized while the ear is yet in the folds of the sheath before the Wheat is in ear. At that period the anthers might be said to be sessile, or to have hardly any length of stamens under them; but as soon as the pollen is shed, the husk of the anther might rot in such close confinement and endanger the safety of the staff of life, now having just received vitality. To prevent famine for lack of Wheat, however, Nature alters her common process in this matter. As soon as the anther is emptied of the pollen the stamen begins to grow, and to push up the husk of the anther away from the embryo seed; and by the time the ear is seen the husk is well-nigh out of the scales which inclose the seed, but stops not there nor till the husk is dangling from a white thread far off from the entrance to the seed-case; and when all dangers are thus provided against, the farmer congratulates himself if the weather is propitious, for his Wheat is in blossom!

• "I do not know an instance 'of the natural crossing of varieties.' My own experience of variable plants was given last week, and I do not exactly comprehend what is meant by natural varieties, for all the so-called varieties in cultivation have been artificially obtained either by a change of cultivation, or by crossing with pollen such kinds or species as would sport from seeds under cultivation. These kinds I call variable plants, their own progeny being constantly variable in aspect, and just as variable when the pollen of another flower is applied to them. It is a difficult thing for a gardener to see or comprehend the meaning of what botanists call varieties, or natural varieties of plants, because there is no limit, or sign, or any other indication in their outward aspect to distinguish them from the oldest species on record, and there is nothing in the botanical structure of even a variable seedling to distinguish it from a genuine species. Professor

Henslow proved that point long since in his comparative anatomy of a cross-bred Foxglove, or some such plant. I do not know of one plant that is a cross between any two plants in a wild state. I do not know that any one has obtained a true cross in any of the pea-flower plants—papilionaceous plants, nor yet any reliable cross among all plants of the Composite order. I know one thing on which many, if not most gardeners, put a great stress or value in knowing—that is, the condition under which plants that are fit subjects for garden decoration are found in their natural habitats; but that knowledge is of little practical value, or may prove to be a hindrance to the proper cultivation of particular plants for some time, and yet might be the means of suggesting why and how plants may be, or have been, induced to cross in a wild state, or have sported into variations without crossing. That one thing needful is proved to be of so little value by the well-known fact that very many garden plants, or their immediate ancestors, did not, and do not at the present day, occupy those regions in the wilderness which were best suited to their natures. Their positions or habitats, as we say, are more often the result of necessity, not of choice. A plant that would thrive and be luxuriant on the sea coast, on the plains, or in valleys in beds of alluvium, or in the shelter of high ridges, or precipitous rocks, can find no foot room in such luxury from the natural competition of more powerful neighbors, as was the case not many ages since among ourselves in the midst of civilized life; and from this competition the weaker plants must always go where they can vegetate and live a quiet life without rank or luxury—in the highways and byways of the savage wilderness, and in time they become the alpine and sub-alpine species of that part of the world from sheer necessity. They may even become sterile from a long course of the starving principle. But now recover one of them from impending fate, give it to a florist or a fancy gardener who is above the vulgar prejudice, in his belief that all plants in a wild state must, of necessity, occupy the places best suited for their natures, and he will soon tell a different version how the matter really stands, and might have stood in the wilds, if the plant could get admission to those parts for which its constitution was formed to enjoy. The plant is found to be a luxuriant grower, not at all like a mountain plant, or a rock plant, or ridge or the bare-places-of-the-earth-kind-of-looking plant one might expect from the description of its habitat. After a round of cultivation has brought it to that point from which it fell, from the competition in foreign parts, it begins to seed; and if it, or any of its seedlings, sport for joy, why, a new race is born into the world, as has been the case at every revolution of the order of things since the world began to be clothed as it is now; or if it comes true from seeds, another flower of the same kind which has already been civilized, as it were, may cross with it or by it, and a generation of gentry is forthwith on the stage of the florists, or of that of the competition tent. But suppose the wild plant had found a place suited to its nature in the struggle with stronger plants, and that it inherited the property of sporting or of crossing with another, may we not believe

that a new plant, or new race of plants might thus result by such natural means, as by the artificial process of the home cultivator? That is as far as the experience of gardeners and cross-breeders can account for natural crossing in a wild state.

"The artificial crossing of pea-shaped flowers is easy enough. All that the operator has to do is to split open the bottom part of the keel-petal or united petals with the point of a pin: that relieves the stamens, which may then be extracted, and the pistil is free also to receive foreign pollen. Mr. Knight made an experiment for getting early Potatoes to seed by planting them on a ridge, and when the plants were ready to bloom he washed away the soil of the ridge to prevent them making young tubers, and so force the whole strength of the plants or roots into the stems and foliage, to see if that would force them to seed. Another form of that experiment is applicable to all bulbs and tubers which form roots on the flowering-stems, as the Japan Lilies and others do. Pot such bulbs or tubers with the neck of the bulbs just at the surface, and when the stem is an inch or two put an empty pot over it, introducing the stem through the hole at the bottom of the pot, then earth up the stem, and when it roots and fills the upper pot separate from the bulbs, then cross it."

THE WINTER OF 1860-61.

BY WM. BACON, RICHMOND, MASS.

WHEN summer is waning into the paleness of autumn, and the beauties of the season have passed away, it seems unnatural to go back and dwell upon the peculiar phases and effects of a winter gone by. Events do not always readily show results: so with our last winter; a season whose effects have blighted many a hope of promise, and sent disappointments into many an enthusiastic heart.

The winter, in many respects, was a pleasant one, bringing much fine sleighing and agreeable temperature; yet it gave us four cold terms, when the mercury sunk below zero. The first of these was December 6, when it fell to 6° below zero; the last was in March, when it fell, after a warm term, to 4° below. In one of the intermediate terms in January it fell to 28° below zero, which was the severest intensity of cold we have ever known. What made this change of temperature more severe, was the fact, that it had been preceded by a thaw, and so sudden was the change, that the mercury fell 64° in less than twenty-four hours.

Another feature of the winter: snow fell on the unfrozen ground in November, and the quantity increased, so that, though the cold early in December was of unusual intensity, the ground remained unfrozen until nearly spring, unless, perhaps, in some localities where the snow was partially blown off. Hence, trees at their

roots were in a moderate temperature, unchanging in the fluctuations of the atmosphere, while the trunks and branches were exposed to all the vicissitudes of climate we have before cited.

Fruit trees of all kinds came into leaf much later than usual, and it was no unusual thing to see the lower branches of pears and plums coming into full leaf while the upper branches were as barren of verdure as in midwinter. Then above a single bud might be seen bursting into leaf, while other parts of the branch looked dead. The plum, however, appears to have nearly recovered from the fatality, and though they give no fruit, the new growth of wood and richness of foliage are encouraging. Not so, however, with the cherry; many of the trees were killed outright, and gave no signs of vegetation. Others showed fruit-buds expanding, but died before they were fully developed. A few trees now show straggling signs of life by isolated clumps of verdure. Such trees are no better than dead. The woodman need not spare them for any value they possess. Those who wish for cherries had better remove them at once, and plant new trees. We have seen but one cherry tree, the present season, that showed a tolerable prospect of being worthy of a locality among living trees, and this was a seedling not yet in bearing.

Pears.—The old Pear trees are pretty nearly used up; many of them entirely dead, and many more no better. Their almost leafless branches show conclusively that henceforth they will only be cumberers of the ground. Younger trees are doing better, and give some hopes of renewed fertility.

"How have the dwarfs stood it?" Ours are all alive, but not unscathed, for, in common with young standard trees, they have suffered more from blight the present summer, than in all the previous period of their existence; and what is worse, this blight continues to show itself. We are careful to remove all infected branches as soon as the disease develops itself, and keep the trees as free as possible from all appearance of its progression.

Peaches.—The Peach trees are all dead. So there will be no more peaches until a new crop of trees are grown. We hope no one will fail to make new efforts in behalf of Peach trees. If they do, they may succeed; if they do not, they will certainly raise no peaches, and it is better to fail in making an effort in a good cause, than to fail through lack of effort.

Apple Trees.—Our old orchards, in the last ten months, have made a ten year's progress in decay, as their partly dead branches fully show forth. Young trees have suffered much by a bursting and peeling off of the bark near the ground in early spring, and many of the trees so affected have died out. As far as we have been able to learn, the Baldwin has suffered most from this cause. Whether it is owing to tenderness of the tree, or the culture given it, we are not able to say.

Grape Vines, unless protected, suffered in common with fruit trees. Their vegetative powers, where they were not killed to the ground, appeared to have

been stifled, so that what life they possessed appeared more like a struggle with death than like a successful effort in healthful vegetation. Such vines as were so affected we found it better to cut down, and let them commence again, than to waste their energies in sickly uncertainty.

Currants and Gooseberries.—The only peculiarity we have seen in them, the past season, was the very novel one that they gave no blossoms above the line where they were protected by snow in that severest change in winter. The blossom buds above this line appear to have been destroyed, yet the wood remained healthy, and the growth and foliage of this summer are beautifully luxuriant.

From the foregoing remarks, it will be truly inferred that our prospects of fruit this fall are very limited. As we have said, all fruit trees that have leaved out, came on slowly and were late. So with the blossoms, they were shown in stunted quantities and of a sickly quality, much later than usual. Apple trees were not in bloom until June, and the quantity will be small and quality bad.

Opinions are at variance as to the *time when* the foundation of this sickly state of things was laid; many have expressed the opinion, that the cold term early in March was the fruitful cause of this unfruitfulness. It may have been a *cause*; but, to our mind, the chief and leading one lay in the sudden change of temperature in midwinter, from the mildness of an autumn's day to the severe cold of almost arctic winter. We felt and remarked then, that the change was rapid enough and extreme enough to try the forest trees among the mountains, much more the more delicate plants in gardens and orchards. How could it be otherwise, with the temperature high enough to induce the opening of buds, with no frost in the ground to impede the labor of the roots and rootlets, with every pore of trunk and branch open, ready to perform its function, and in one short winter's day to change all this moisture and fibre into icy hardness?

But the loss of many trees and a year's fruit will not, we fear, be the only bad result of this winter's calamity. The desponding and faint-hearted will no doubt say, "It's no use trying; fruit trees won't do nothing; they may as well give it up." Not so; there are enough pear and apple trees left to form a bow of hope, and the cherry and peach can soon be brought into bearing. There have, perhaps, been such winters and such discouragements before, and it may be long before another such occurs. Set out two trees for all that are lost. Success will yet attend fruit culture.

[The disasters of the past winter have no doubt been great and discouraging enough here; but in Europe they have been infinitely greater, and for two or three months past English horticultural journals have devoted a large portion of their space to accounts of the losses. They are wise enough to profit by such things; we ought to be equally so. It is weak and cowardly to give it up because of a single defeat. We may not have another such winter in fifty years;

and we have already learned enough to protect us from many of its casualties. There should, therefore, be no hesitancy in repairing our losses at once. It is interesting and important to know, however, what is, and what is not hardy.—ED.]

NOTES ON CALIFORNIA VINEYARDS.

BY OUR CALIFORNIA CORRESPONDENT, J. Q. A. W., SAN FRANCISCO.

THE following is a list of Vineyards in the city and county of Los Angeles, California, from the official lists of city and county assessors, 1860:

| NAMES OF PROPRIETORS, ETC. | BEARING | YOUNG | ACRES | | NAMES OF PROPRIETORS, ETC. | BEARING | YOUNG | ACRES | CULT. |
|-----------------------------|---------|--------|-------|--------|----------------------------|---------|--------|--------|--------|
| | VINES. | VINES. | CULT. | | | VINES. | VINES. | CULT. | |
| Josi Yburra, - | - | 2,000 | 2 | | Ant. F. Coronel, - | - | 20,000 | 20,000 | 60 |
| Louis Wilhart, - | - | 8,000 | 8 | | John Frohling, - | - | 8,000 | 10,000 | 18 |
| Ramon Yburra, - | - | 4,000 | 6 | | Ramon Valenzuela, - | - | 4,000 | - | 8 |
| Guadeloupe Romero, - | - | | 8 | | Villa Labos, - | - | | 6,000 | 8 |
| Estate of H. Cardwill, - | - | 2,000 | 6 | | Cristoval Aguilar, - | - | 10,000 | 20,000 | 60 |
| Nuvis Ruis, - | - | | 7 | | Ysidro Reyes, - | - | | 10,000 | 15 |
| Josi Sepulvida, - | - | 4,000 | 4 | | P. Commonfort, - | - | 4,000 | 4,000 | 8 |
| Geronimo Yburra, - | - | 1,000 | 1 | | Geo. Dalton, - | - | | 8,000 | 35 |
| A. Beunson, - | - | 2,000 | 6 | | Foster & Woodworth, - | - | 10,000 | - | 12 |
| Christoval Aguilar, - | - | 4,000 | 4 | | Intian Chaves, - | - | 8,000 | - | 13 |
| Diego Sepulvida, - | - | 7,000 | 14 | | James Weibel, - | - | | 4,000 | 4 |
| Januariso Avila, - | - | 4,000 | 8 | | John Farrell, - | - | | 6,000 | 6 |
| Virinzo Hoover, - | - | 5,500 | 7 | | Julius Weyser, - | - | 6,000 | 8,000 | 17 |
| T. J. White, - | - | 14,000 | 20 | 6,000 | B. Bronius, - | - | 8,000 | - | 17 |
| Sensevaine Brothers, - | - | 50,000 | 60 | | Y. Reyes, - | - | | 15,000 | 25 |
| Lugurda McLaughlin, - | - | 8,000 | 8 | | Pierre Lassevalle, - | - | 4,000 | - | 7 |
| Joseph Hoover, - | - | 12,000 | 14 | | Chs. Cassagne, - | - | | 5,000 | 7 |
| John Roland, - | - | 14,000 | 30 | 11,000 | Francisco Botteller, - | - | 8,000 | - | 16 |
| Mateo Keller, - | - | 8,000 | 60 | 50,000 | John C. Bejar, - | - | | 10,000 | |
| W. Wingastner, - | - | 10,000 | 20 | | Abel Stearns, - | - | | 2,000 | 8 |
| Paul Kern, - | - | 7,000 | 15 | | Manuel Riguerra, - | - | | 8,000 | 8 |
| John Behn, - | - | 5,000 | 8 | | Francisco Alvarodo, - | - | | 4,000 | 6 |
| Cha. Baner, - | - | 10,000 | 20 | | Cha. Chapman, - | - | | 3,000 | 3 |
| P. Collins, - | - | 8,000 | 20 | | Valder estate, - | - | | 2,000 | 2 |
| F. Lopez, - | - | 8,000 | 60 | | J. S. K. Ogier, - | - | | 5,000 | 6 |
| B. Burtamente, - | - | 8,000 | 16 | | Thomas Urquides, - | - | | 5,000 | 15 |
| Michel Sner, - | - | 6,000 | 14 | | H. Clayton, - | - | | 4,000 | 6 |
| Clara Reyes, - | - | 8,000 | 14 | | C. Moreno, - | - | | 4,000 | 7 |
| — Labory, - | - | 12,000 | 12 | | Augustin Machado, - | - | | 8,000 | 8 |
| Musser's Hammerl, - | - | 8,000 | 32 | 20,000 | — Reyes, - | - | | 10,000 | 20 |
| Manuel Corowie, - | - | 16,000 | 32 | | O. W. Childs, - | - | | 12,000 | 40 |
| Josi Rubio, - | - | 10,000 | 20 | 10,000 | Eulogio Celio, - | - | | 8,000 | 18 |
| Wilson & McDonald, - | - | 15,000 | 30 | | Antonio Rocha, - | - | | 15,000 | 35 |
| Felipe Martin, - | - | 12,000 | 15 | | Henry Hancock, - | - | | 5,000 | 25,000 |
| Howard & Chaplin, - | - | 12,000 | 50 | 20,000 | Daniel Martin, - | - | | 8,000 | 15 |
| Leach & Baker, - | - | 20,000 | 44 | | Mrs. Flashner, - | - | | 14,000 | 30 |
| Alexander & Buchanan, - | - | 20,000 | 20 | | Viel & Delano, - | - | | 12,000 | 20 |
| Geo. Carson, administrator, | - | | 20 | | Louis Mewham, - | - | | 10,000 | 30 |
| Jno. R. Scott, - | - | 50,000 | 60 | | Sisters of Charity, - | - | | 8,000 | 12 |
| Juan Padilla, - | - | 20,000 | 35 | | Juan Apabloza, - | - | | 4,000 | 6 |
| Paul Prior, - | - | 6,000 | 8 | | John Domingo estate, - | - | | 8,000 | 12 |
| Wm. Wolfskill, - | - | 90,000 | 120 | 10,000 | Josepa Perez, - | - | | 12,000 | 20 |

| NAMES OF PROPRIETORS, ETC. | BEARING VINES. | YOUNG VINES. | ACRES CULT. | NAMES OF PROPRIETORS, ETC. | BEARING VINES. | YOUNG VINES. | ACRES CULT. |
|---|-------------------|-----------------|--|--|-------------------|-----------------|----------------|
| Elijah Moulton, - | 5,000 | 20 | | Yerbe family, <i>Santa Anna</i> , 20,000 | | | 40 |
| Henry Burrows, - | 10,000 | 10,000 | 25 | Ygnacio Alvarado, <i>San José</i> , 6,000 | | | 10 |
| F. P. F. Temple, - | 5,000 | 20,000 | 100 | Ygnacio Patomares, " 7,000 | | | 20 |
| Francisco Lopez, - | 14,000 | 20 | | Henry Dalton, <i>Arusa</i> , 25,000 | 10,000 | | 150 |
| M. Clements, - | 8,000 | 12,000 | 24 | — Duarte, - 2,000 | | | 40 |
| Martin Lelong, - | 5,000 | 10,000 | 20 | Barton's estate, <i>Los Nietos</i> , 6,000 | | | 12 |
| Andrea Pico, <i>San Fernando</i> , 35,000 | | 40 | Carpenter estate, " 12,000 | | | 40 | |
| Viento de la Aza, <i>Encino</i> , 5,000 | | 10 | José Colima, " 4,000 | | | 50 | |
| Benj. Wilson, <i>San Gabriel</i> , 40,000 | 80,000 | 100 | F. P. F. Temple, <i>El Monte</i> , 200 | | | | |
| German Vineyard Co., " | 400,000 | 1,000 | | Flores, " 4,000 | | | 10 |
| John Roland, <i>La Puente</i> , 6,000 | 2,000 | 30 | Rancho de la Cienega, - 3,000 | | | 25 | |
| Wm. Workman, " | 10,000 | 45,000 | 15 | | | | |

The above is the only complete list published, and will give your readers some idea of the number of vines now under cultivation and in bearing in the city and county of Los Angeles. Of course, large additions are being yearly made.

I have in a previous letter stated, somewhat briefly, facts connected with the culture of the grape and wine making, in Los Angeles County, and shall in later letters go more fully into the subject, when I have more time. I believe in my last I promised to give you some description of other wine establishments in the city. Pausing now for a moment to speak of the ALISO VINEYARD, owned by Sassevaine Brothers, situated only a short distance from the main street. The name is derived from a large tree which is growing in the yard near the house, its huge branches covering almost the entire portion of the establishment devoted to the wine presses, distillery, &c.

The number of acres inclosed to the vineyard and garden is eighty-one, comprising some sixty thousand vines, fifty thousand of which are in bearing, producing a crop of about seventy thousand gallons of wine. The varieties made here are the Red, White, and Sweet Wine, or Angelica, and the celebrated Sparkling Champagne. They also make about four thousand gallons of Brandy.

During the vintage season, they employ some thirty hands, principally Indians. Connected with the establishment there are five large cellars, each one hundred feet deep by eighteen feet wide. Another, eighty feet long by eighty feet wide, contains about fourteen hundred pipes of wine. These cellars, I noticed, were filled with wine, and contained in all from one hundred and fifty to two hundred thousand gallons, of all kinds and vintages, from 1858 to the present time. All these cellars were on the ground.

The vineyard was looking very flourishing, and the fruit of large size, and very plentiful. Dividing the vineyard is a long arbor of trellis work, six hundred feet long, covered with vines and fruit: a truly beautiful sight. But the orange grove and garden particularly attracted my attention. This garden is surrounded by a high fence, and on entering, the sight is charming indeed; like a very paradise; the perfume of the oranges, fruits, and flowers, filling the air. There are in bearing about thirty trees, many of them of large size and loaded with fruit, which has the past season brought over one thousand dollars. The citron trees, some fifty in

number, were also loaded with fruit, of monstrous size ; these trees are in bearing generally after the sixth year. In the orchard are three hundred and fifty orange trees, nearly in bearing condition. The orchard contains also about three hundred peach trees, which have borne profusely, the fruit of which is partly sold, and the balance made into excellent peach brandy. The pears, apples, figs, and other fruit trees, were looking well, and sufficient crops are raised for family use.

The conveniences and arrangements for making wine are very extensive. The process for making brandy is the most complete in the county. The still is a large one, imported from France expressly for their use, made by François Vivarre ; its capacity is about three hundred gallons per day. The process is the same as that by which cogniac is made in France. The whole is under the charge of Fernando Vittal, long experienced in the business in France, and who has been at the Aliso vineyard for six years. There are thirteen large tanks for fermentation, holding about fifteen hundred gallons each.

It is at this place that the celebrated Sparkling California Wine is made, which is now having an immense sale, not only here, but at the East, from which latter they are now receiving orders of from three to four hundred dozen cases per month. This wine commands twelve dollars per dozen, at wholesale. At the establishment in San Francisco, there are in the cellars sixty thousand bottles of Sparkling California Champagne. We tasted a delicious article of their manufacture, called the Nectar of Walnuts, which has not yet been made in quantities sufficient to send to market, but they expect, the coming season, to manufacture a large quantity.

Near by are the Aliso Mills, conducted by Mr. Ponlain, worked by water power from the Los Angeles river, by a flume one mile long and ten feet high. From this is formed a beautiful cascade, or sheet of water, falling the distance of ten feet, producing a beautiful effect. This water, passing off by the main yanka, is distributed to other tributary streams, irrigating the vineyards. The main avenue leading to the mansion is about a quarter of a mile long, lined with trees and shrubbery ; and the whole appearance of the place is attractive and imposing.

Mr. P. Sansevaine has already gone to New York to open a branch house for the sale of their wines in that city. About three hundred pipes have already been sent, to be followed by regular shipments. I have no doubt the enterprise will be fully successful. Your readers and the public will have a good opportunity to test fully our California wines, and the famous Sparkling Champagne.

During my visit to Los Angeles, I visited all the prominent vineyards in the city and county, some of which have been described in my notes to the Stock Journal. There are many vineyards here of good repute. Kohler & Frohling, Wolfskill, Julius Weyse, John Rains, Don Benita Wilson, Dr. White, and others. But as I stated in a previous letter, the most celebrated wine comes from Coco Mongo, in San Bernardino County ; this vineyard is owned by John Rains, and contains some hundred and fifty thousand vines. This is owing to the peculiar nature of the soil, and care in manufacturing, although the location, near the moun-

tains, favors the grape amazingly. This wine is some twenty per cent. above Los Angeles wine in saccharine matter. The soil is a gravelly loam, containing chemical properties especially adapted to the cultivation of the vine.

The charge of adulterating wine should not wholly be laid to the manufacturers, as the mixing process is mostly performed by parties who buy up good and poor wines, and doctor them up in San Francisco, to the discredit of those honorably engaged in the business. Policy requires the truth; and we hope that a different state of things may ensue. When the business is under the control of men able to carry it on safely and scientifically, then the errors will be avoided under which the business now suffers.

I might go into detail and give the full particulars concerning the laying out and cost of a vineyard, as well as some important points connected with the culture of the grape in California, but time will not admit with this article. I have notes of much interest connected with this subject, from my own personal observation, which I may embody in future letters, should you desire. It is an undisputed fact that there is no plant, tree, or vine grown, that will in time, and with proper care, prove so beneficial and remunerative as the grape; and with us here it is destined to play no unimportant part in the future products of our state.

I will, in conclusion, give you a statement showing the articles shipped by the forwarding house of Tomlinson & Co., of Los Angeles, from the 1st of January to the 20th November, 1860, from their books, which I obtained while there, through the courtesy of their book-keeper, J. L. Miller:

"Wine: 464 pipes; 165 bbls.; 17 $\frac{1}{2}$ -casks; 20 kegs.

"Brandy: 2 bbls.; 6 $\frac{1}{2}$ -pipes.

"Grapes, 1046 boxes, 120,431 lbs."

The above merely shows the shipments by one house; the other house of Banning and Hinchman probably sent as much.

This will close for the present my notes from Los Angeles. In my next, I will give you some account of my trip to Santa Clara valley, with a full description of the extensive vineyards, wine making, &c., and sketches of the beautiful gardens in and about the city of San José.

GARDENS AROUND BOSTON.

BY REV. A. D. GRIDLEY, CLINTON, N. Y.

ONE way to acquire information on the subject of ornamental gardening, is to study books which treat of it. Another is to visit good specimens of such gardening, and examine them somewhat in detail. The last is important as a sequel to the first. It fixes in the mind and illustrates what one has read, and it inspires him with an enthusiasm which never comes from books alone. Whoever visited

the home of the late Mr. Downing, at Newburgh, during his life, came away with many new ideas and new impulses. No one who has traversed the grounds of Mr. Kelly, at Rhinebeck, or of Mr. Sargent, at Fishkill, or of Mr. Hunnewell, near Boston, and other places like them, will fail to remember many things which he then saw, or soon cease to feel the new interest they gave him in the pursuits of refined rural life.

It was the privilege of the writer to visit, last summer, the grounds of Mr. Hunnewell, at West Needham, Mass., and of Mr. Hovey, at Cambridge; we wish, now, to share with others somewhat of the information and pleasure those visits gave us.

The Worcester train from Boston sets you down at Needham, within a short carriage ride of Mr. Hunnewell's gate. As you approach the place, the eye catches glimpses of the house, of goodly trees and a well-kept lawn—views which have been opened, it would seem, with an eye to the best effect. The iron gateway, on the Natick side of the premises, passed, we walk up the broad "approach" skirted by white pines and larches. These have been only ten years planted, and yet are twenty-five or thirty feet high. Notice this carriage-way; how finished the grading, how smooth, hard, and clean it is kept. Here, at the left, is the nursery-ground, where the proprietor planted and trained his trees before setting them in their present positions. And here, now, are many of the newer trees going through a period of probation, in which their hardiness and adaptedness to the American climate will be tested before they can be advanced to conspicuous posts of honor and duty.

Drawing nigh the house, our attention is attracted by a Weymouth pine clipped in the shape of a bee-hive or small hay-cock. Not an inch of trunk or branch is visible; it is only a round, wavy globe of silvery foliage, soft to the touch as a mass of plumes, and in all respects very singular and beautiful. It seems almost incredible that the lordly pine, which naturally aspires to vault more than a hundred feet into the air, can be so easily subdued to the dimensions of a lowly shrub. Just beyond this, is a circular bed of dwarf evergreens, pygmies by nature. Let us read the names on the labels: *Abies Gregorii*, *A. pumila*, *A. Clanbraziliana*, and *A. pygmaea*; *Pinus strobus pumilis*, and *P. sylvestris pumilis*. These are all accommodated within a bed some twelve feet in diameter, and have room to spare. The books tell us that these miniature trees will hardly exceed twenty inches in height in as many years. Odd, arn't they?

Across the carriage drive are several large magnolias of different species. Here, too, is a handsome climbing plant, covering an ornamental frame of woven wire. It is the *Physianthus albus*, clothed all over with delicate white blossoms. It is easily managed, by treating it like the dahlia, cutting down the stalk in October, housing the root through the winter, and planting out late in spring.

Passing to the north and west sides of the dwelling, we come upon fine collections of exotics, out for a summer airing. The large plants, in tubs ranged upon

the lawn, make quite an imposing show. That Pampas Grass, how it sends up its silvery spray! And here is a large oval bed, with a group of Canna Warszewicsii in the center, surrounded by a double row of Calla *Aethiopica*, the white blossoms of the latter contrasting finely with the dark foliage and scarlet flowers of the former. Beyond, is the French parterre, with its central fountain. But we can not pause to examine these many attractions in detail, as we would like, and so follow our guide to other portions of the grounds.

Stopping for a few moments' rest in the rustic summer-house, overlooking the lake, we next come to the terraced Italian garden. The suddenness and unexpectedness of this view give the stranger quite a start of pleasurable surprise. From the shade of overhanging forest-trees you step at once upon an open lawn, and stand upon a parapet overhanging a valley and a beautiful sheet of water. The side of this valley below you, (which is almost crescent-shaped,) has been thrown into terraces, eight or ten feet wide, which are descended, at several points, by broad flights of steps. On either side of these steps, are curious specimens of the topiary art, after the old Dutch methods—Pines, Hemlocks, Spruce and Silver Firs, the English Maple and native Beech submitting to the shears very patiently. Mr. Harris, the intelligent head-gardener, tells us that it requires only two annual clippings to keep these trees in perfect subjection. Along the pillars of the parapet, and by the side of each flight of stairs, are set vases of Aloes and other architectural plants, and near the margin of each terrace are planted rows of Juniper and Yew, the light and dark foliage of the two contrasting finely. At the foot of the terraces, a neat, little semicircular grass-plot spreads out to the lake, where a pleasure-boat rides moored to the shore, ready for use. The whole scene, as viewed from above, is highly artistic.

Ascending the steps and following the carriage-way to the left, we soon enter a native wood, where, in occasional openings and partial clearings, are set many new and untried trees and plants in soil and exposure suited to their respective wants. Among these are some with curious foliage—gold-tipped, silver-striped, veined, spotted, and copper colored. Here, too, the newly imported conifers find a congenial home while being tested as to their hardiness. Of the latter we noted a few which struck us as particularly fine, such as: *PINUS Benthamiana*, *pinsapo*, *insignis*, *nobilis*, *pyrenaica*, and *Beardsleyi*; *PICEA Webbiana*, *Pichta*, *Nordmaniana*, *nobilis* (beautiful bluish foliage,) *Cupressus Lawsoniana*, (fine); *ABIES nobilis*, *Douglasii*, and *Smithiana* (good, but seemed to have suffered from frost;) *Chamaecyparis sphaeroida*; *Thuiopsis borealis*; *Thuja Hoveyi*, (not imported, but finer than many "far-fetched and dear bought;") *Cephalotaxus Fortunei*; *Wellingtonia gigantea*, (somewhat scorched,) and many others. Along these half-shaded walks, and in this peaty soil, the Rhododendron, Kalmia, Azalea, and Holly flourish very well. Mr. Hunnewell, like Mr. Sargent, seems to be a "tree-taster" for American planters, and as such deserves the public gratitude.

Returning from this portion of the grounds—which would reward the study of several days—we approach the open lawn, and looking across it at its greatest length, observe several fine vistas or openings between groups and scattered trees. This lawn is, after all, the most impressive feature of the whole establishment. About eight acres in extent, evenly graded, the grass a bright green, fine and compact in texture, and neatly shorn and rolled, what could be asked more? The trees set here and there, singly and in groups, are well-chosen specimens of their several kinds.

Crossing now to the fruit and vegetable gardens, and graperies, we find every thing conducted on the same liberal scale. Not only pears and plums, but nectarines, peaches, Royal Muscadines and Black Hamburghs, seem as abundant as the apples of the farmer's orchard.

But the hour for the return train to the city approaches, and we reluctantly leave this beautiful residence, rejoicing that such ample means are controlled by such intelligence and such pure and elevated taste.

Not the least attraction among the gardens around the modern Athens, is the nursery establishment of the Messrs. Hovey, at Cambridge. The horse-railroad set us down within a few minutes' walk of the grounds, which cover several acres on opposite sides of the street. On the one side, are the famous avenues of pear trees, of which every horticultural reader has heard more or less, for the past fifteen years. Here are between 2,500 and 3,000 specimen trees, comprising every known and desirable variety, native and foreign. They were not all of them such perfect pyramids in form as we had expected to see, but they were remarkably healthy and productive. At the time of our visit, many of them were loaded with fruit; from others it had already been gathered and sold in Boston market.

And have you any secret method for raising pears so successfully? we asked one of the proprietors, as we walked among the bending trees. "None whatever," said he; "no methods besides those we openly teach, and which are well understood by all sensible horticulturists. Of course, occasional failures will happen, under the best management, but with good trees to start with, followed up by good culture, every body can raise pears, both standard and dwarf."

The fruit department being hastily glanced at, we passed on to the more ornamental portions. Such a display of Asters we never saw before, of almost every color and shade; some as large as dahlias, and nearly as double, others as small and as perfectly formed as the finest pompon chrysanthemum. It is no wonder that the Aster, in its many varieties, is becoming the most popular of fall blooming annuals.

Here we had our first satisfactory view of the new arbor vitae, styled *Thuja Hoveyi*. It is an accidental seedling which sprang up in these grounds among a multitude of plants raised from seeds of the native arbor vite. The foliage is nearly or quite as delicate as that of *Thuja aurea*; it is laid in the same

flat plait or folds, upright and compact together, and has the same golden tinge. While it is as dense and as hardy as the Siberian, it is much more refined and beautiful.

It pleased us to observe in these grounds the beginnings of a Pinetum, which, with the large facilities for obtaining trees at command of the proprietors, must soon become the repository of every conifer hardy in this climate.

Crossing to the other side of the street, and passing up a broad avenue swept by tall Norways and Hemlocks, we entered the lawn. This is not large, but is well made, skillfully planted, and admirably kept. A walk running in flowing lines near the boundaries—which latter, by the way, are concealed by hedges and shrubbery—gives one an opportunity to examine in detail many trees, shrubs, and plants of great beauty. Of these, we can now recall only the purple-leaved and Norway Maples, the *Virgilea lutea*, Fountain Willow, cut-leaved Oak, weeping Elms, fine Hemlocks and Junipers. Here, too, were some of the newer evergreens, such as *Cupressus Lawsoniana*, *Thuiopsis borealis*, *Pinus pyrenaica*, and several others. Here, also, were rare exotic plants in pots plunged to the rim, giving quite a luxuriant and tropical air to the place. But the lawn itself attracted our special admiration; so smooth, so soft, so elastic to the tread, it was a real luxury to walk upon it. And coming, as we had so recently done, from Mr. Hunnewell's magnificent expanses upon this little gem of perhaps half an acre, we admired it all the more. It was of such dimensions as almost every country gentleman of moderate means might reasonably devote to his lawn, and it showed how much beauty could be had in so small a compass.

Of the floral department we must speak briefly, our visit being quite short. Among the specialties, the Japan Lilies and Gladioli were quite noticeable. Of the former, there was a fine collection, not only of the old *rubrum*, *album*, and *speciosum*, but of six or eight seedlings produced here by hybridizing the Japan sorts with our native species. The result has been a lot of hardier plants, with handsomer foliage, and, in some instances, superior beauty of the flower. The one named *Melpomene* struck us as particularly fine. Of the newer Gladioli, the collection was large and very good: the flowers crimson, yellow, scarlet, white, pink, and of other shades and with curious markings. Here, too, were Rhododendrons and Azaleas, in vigorous health, the peaty and sandy soil of one part of the grounds being well adapted to their wants.

But we must close these rambling sketches, attempting only a glance at the more noticeable features of this establishment. The record we have made is as unsatisfactory to our own eye, as it will perhaps be to the polite proprietor who waited upon us.

[One word of thanks, Mr. Gridley, for your interesting and instructive sketch. We must express our regret, too, that a gentleman of such refined taste, and wielding such a polished pen, should not oftener employ it in the cause of Horticulture.—Ed.]

SEXES OF THE STRAWBERRY.

BY A. S. FULLER, BROOKLYN.

WITHIN the last few years there has been so much written about the sexes of the strawberry, that it may be thought superfluous to say any thing more upon this question. But there are certain cultivators (ourself among the number) who will not agree to any *finality* on this question, unless it agrees with our opinion of science and truth; and we hold that our opinion is as good as that of others, until facts are produced to prove that we are in the wrong.

Linnæus placed the Strawberry in the 11th class of his system, *Icosandria*, which class is founded upon the number and position of the stamens. Stamens more than ten and on calyx, pistils numerous, surrounded by the stamens; therefore the flowers are hermaphrodite or perfect, as they contain both male and female organs.

Now if we have read carefully, no botanist, from the time Vaillant commenced arranging plants in conformity with their organs of generation, down to the present time, has asserted that the Strawberry has been placed in a false position in botany. Neither has there ever been discovered a variety in its wild or normal condition, which did not possess both stamens and pistils, and both of these perfect in the same flower. Varieties have been found growing wild near where strawberries were cultivated that were wanting in some of their organs, but such are undoubtedly seedlings from cultivated varieties, which had been distributed by birds or animals.

According to the natural arrangement of botany, the Strawberry belongs to Rosaceæ or Rose family, in which are included the Apple, Plum, Peach, etc. Among each and every one of these we find sterile or barren varieties, which have been produced by cultivation. Some are sterile from one cause and some from another. Some have double flowers, the stamens having changed to petals; others produce no pistils, others no stamens, all of which are in a botanical sense deformities. Suppose a would-be botanist should assert that the double Rose, Plum, Peach, and Apple were natural, and endeavor to form a new class, separating them from the single wild varieties; would the true botanist be willing to allow him thus to encroach upon the field of truth? Far from it; neither will he admit that the pistillate, stamine, or any other monstrosity which may be produced by cultivation of these plants, be admitted into botany as natural flowers.

When the stamens are wanting in a variety, and pistils are present, it is called pistillate, and consequently sterile or barren, unless fertilized by pollen from some perfect flowering kind. But when a variety produces flowers containing stamens only, it is, as a matter of course, perfectly sterile, and no art of man can make it produce fruit. Some varieties produce both hermaphrodite or perfect flowers,

or pistillate or imperfect flowers, on the same plant, but the pistillate flowers are fertilized by the hermaphrodite, and then they both produce fruit.

In growing seedlings from pistillate sorts, we have found that not more than one in ten retained its pistillate character; and we have never been able to produce a pure staminate variety, although we have sometimes produced varieties that had stamens and pistils, both of which were undeveloped, and consequently barren.

When a variety has been produced either pistillate or hermaphrodite, it generally remains true; that is, no pistillate will change to a hermaphrodite, or *vice versa*. But sometimes a slight change may be produced by change of climate or cultivation, such as we often see in other plants, as the double rose becoming single or semi-double, etc.; so it is with the flowers of the Strawberry; for we have seen pure pistillate flowers on a plant that was under ordinary circumstances a hermaphrodite flower, and pistillate plants produce hermaphrodite flowers. This fact was proved by Thomas Meehan, of Philadelphia, a few years since, by fruiting the Hovey under glass without its being fertilized by any other variety.

We have never observed stamens in the Hovey, but we have in other varieties which are classed as pure pistillate varieties.

We can see no good reason why these changes should not take place, if the single Pink or Dahlia can be made double by successive generations of seedlings, and then, by a change of climate, soil, or a year or two of neglect, produce its single flowers again. Why should not the Strawberry, under like treatment, be made to change some of its characteristics?

We find nearly all of our cultivated fruits and flowers constantly producing sports and variations, and sometimes to these variations we are indebted for some of our most valuable varieties. It is here that we can find a solution for this Strawberry question; the cultivated varieties are not in their normal condition, but they are partly a creation of our own, and, as such, very liable to change.

Some fifty years ago, it was discovered, by Kean, in England, that some of his Strawberry plants produced flowers containing only pistils, and from that time down to the present pistillate varieties have been more or less in cultivation. Some cultivators have claimed that they were more productive than the hermaphrodite varieties. In some instances this seemed to be the fact; but to put this down as a rule would be fallacious, for we have observed that whenever pistillate varieties were wonderfully prolific, they were generally of small size, or not more than medium, while a large majority of our very large varieties are hermaphrodite.

Admitting that pistillate varieties were more productive than hermaphrodite in years past, the advent of the Wilson, Downer, and several others, completely explodes this pistillate theory; as they are perfect flowering, and yet more prolific than any known pistillate variety.

THE RAVENSWOOD PEAR.

(See Frontispiece.)

BY THE EDITOR.

We present for a *Frontispiece* this month a pear known around New York as the *Ravenswood*. It is a wilding, found some years since in the woods at Ravenswood. Its fine quality being discovered by a gentleman of that place, it was removed, and placed on the grounds of Mr. Erhard. It is a summer pear. Its size will be regarded by many as an objection; and it is to be regretted, on account of its excellence, that it is not larger; still there are many amateurs who prefer a small pear of fine quality to a larger one with no quality at all. Its earliness and excellence, we think, will entitle the *Ravenswood* to a place in the amateur's collection at least, being one of the best pears of its season. The form is obovate. Color greenish yellow, covered with small brown specks, and often with a red cheek. Stalk, short and thick. Calyx open, in a small shallow basin. Flesh, fine grained, melting, juicy, and high flavored. It is a vigorous grower, and very productive. It ripens the last of July and beginning of August. Our frontispiece conveys a very good idea of it.

FOX MEADOW FARM.

BY THE EDITOR.

We lately made a brief but long-projected visit to Fox Meadow Farm, the country seat of Charles Butler, Esq., whose hospitality it is always a pleasure to enjoy. The place itself is full of Revolutionary associations, having been "debatable ground." The meadow was overrun with foxes, and hence was called Fox Meadow, a name which Mr. Butler very properly retained when he purchased the estate, upward of 300 acres in extent, and embracing a remarkably fine inland view. No other place that we know of presents more striking evidences of the great value of underdraining. What is now the garden with its fruitful trees, and flowers, and graperies, was, at the time of Mr. Butler's purchase, only a few years since, an unsightly morass, covered with a tangled undergrowth, impassable to man or beast. Cattle sank to their girth on entering it. The change seems the work of magic; but the credit of it is due to John Ellis. Another spot, almost as bad, embracing some twenty acres, has about fifty thousand drain tile in it, and is now covered with as fine a piece of corn as we ever saw. This is also a thorough piece of work, and the only instrument Mr. Ellis used was the common carpenter's level, though he ought to have had something more.

There are about one hundred acres of fine woodland on the place, with a splendid undergrowth of Kalmias, Rhododendrons, &c. On the table land, just at the

entrance to the woods, there is a fine piece of water, with a beautiful cascade leaping down over the rocks and through the woods into Bronx River. This piece of water is susceptible of being made a grand feature of the place, and probably will be. In the middle of this pond somebody has built a square stone island. We do not know whether our good friend, Mr. Butler, had any thing to do with this, but he will excuse us for uttering the hope that an earthquake, or other potent cause, will some dark night tumble it to pieces.

Fox Meadow is of a rolling or hilly character, and possesses within itself a number of commanding views. Its natural features are very fine, and are capable of being worked up effectively. This is now being gradually done, and at no very distant day Fox Meadow will be a charming place. The graperies, however, constitute one of the great features of the place at present. They cover about a thousand feet of glass. They are used principally for forcing, there being only one small cold house. We have seen these houses several times before, but never, in their season, without a grand crop of grapes in them; and this year they seem better than ever. Mr. Ellis, we take pleasure in saying, ranks among the most skillful grape growers in this country; he who surpasses him does something to be proud of. Unlike a great many others, he has not done learning. Some experiments conducted during the past winter, embracing new features in grape growing, have been eminently successful; but we leave them for Mr. Ellis to tell himself. We may mention one fact, however, having a bearing on the influence of light and air. In one house, where the vines were crowded very close together, some of the intermediate ones were removed, thus admitting more light and a better circulation of air, as well as giving increased freedom to the roots; the result has been, that spurs that ripened only one bunch last year, have this year ripened two or three handsomely. Mr. Ellis's pride seems to be, not so much to grow a large bunch, as one that shall be thoroughly ripe, with a high color and thick bloom. That he grows large bunches, however, we know, for we saw a number weighing from two to five pounds each, which can only be produced by vines in the best condition. We saw also several splendid bunches of Muscats, weighing from three to five pounds each, thoroughly ripe and delicious, the berries looking like great drops of amber. There were also splendid Cannon Hall Muscats, not quite so large in the bunch, but much larger in the berry, and even more delicious. The vines were all healthy, making a vigorous growth, and carrying their wood and fruit to perfection. We know of no place where vines can be examined with more satisfaction than at Fox Meadow. Its genial hearted owner has much reason to be satisfied with every thing thus far done.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

NEWBURGH VINEYARDS.—Enjoying recently the hospitality of Mr. Woodward, at Newburgh, we took occasion to examine a few of the vineyards for which Newburgh will soon become famous. Our time being very limited, we made the best use we could of it. Mr. Woodward has about two acres in vines, comprising the leading varieties, and all the new ones he could get. We have already published the results of the winter with him. Isabellas and Catawbas will give place to Delaware, Concord, and such other early ripening kinds as are better adapted to the climate of Newburgh. Mr. Woodward's vineyard is well located, and has had the advantage of good preparation. The growth is healthy and strong; and as Mr. Woodward reads the *Horticulturist*, we shall expect to hear a good report of these vines when they come into bearing. He has also a new grapery, in which every thing is going on in a most satisfactory manner, except that he neglects to use his thumb nail as promptly as he should. We suspect that will not be the case hereafter. We also saw here the Woodward grape, of which we shall speak hereafter. Putting up a fleet span of horses, Mr. Woodward's son drove us about to look at some other vineyards. The first was Mr. Cornell's, which covers about five acres. The vines are of full bearing age, but seem to have suffered much during the past winter. Mr. C., we believe, purposes working over his Isabellas and Catawbas. Mr. Cornell not being visible, our observations were made from the road-side, a vineyard being a place upon which even an old acquaintance should not trespass without the knowledge of the owner; in addition, we were afraid he would detain us too long if he saw us. The next vineyard we saw was Mr. Brown's. This is young, and planted with good kinds. With suitable culture and a good system of training this vineyard will in time produce good fruit. The next one belonged to a person whose name we forgot. We were grieved to see that he has formed the opinion that grapes may be grown without culture, the whole being choked with grass and weeds. Let him at some leisure moment compare his vines with Mr. Woodward's, Mr. Mace's, or any

others that are cultivated, and he can not fail to see that he is making a very great mistake. There can be no greater absurdity than laying a vineyard down to grass, and those who are doing so will find that they are squandering their wealth. After a glance at two or three other small places, all young, we stopped, in the dusk of evening, at Captain Morton's, whose home is the old head-quarters of General Knox. The captain very politely showed us through the house, explaining every thing of historical interest, and told us how a grand ball was given there, attended by General Washington and his staff, besides all the belles of the place: all the girls seem to have been belles in those days, and some of them have left their names scratched on the windows to this day. A look at the old mill, granary, etc., in the dusky twilight completed our visit, and we drove back to Mr. Woodward's to enjoy a hearty supper, and after that some good music. The next morning, thanking our kind friends for their polite attentions, we started, in company with Mr. Woodward and his son, for our good old friend, Mr. Downing's, who, and his wife, are among the kindest people we know. We never visit Mr. D. without finding our horticultural enjoyment full and complete; he has always something new to show and something fresh to tell.

Having heard that Benj. H. Mace, Esq., had begun the formation of a Delaware vineyard, we made a brief call to see him, and were highly gratified with what we saw. Mr. Mace's situation is an elevated slope, facing a little south of east, but well protected on the north and west. The soil was thoroughly prepared. The vines are planted four feet apart in the rows, the last being six feet apart. Mr. Mace took occasion to say, that though a portion of his vineyard was prepared and planted before he saw our grape articles, he could not have followed our suggestions more precisely if he had had those articles before him from the beginning. While we felt complimented, we could not help thinking him a very sensible man. The vines are from one to four years old, and are in all respects in the very best condition, showing great vigor and health. The wood, in size, compared favorably with the Diana. The fruit surpassed any thing we have yet seen of the Delaware, the vines being literally loaded down. A great many bunches will weigh fully half a pound, and some more when ripe. The berries will come nearly up to the size of the Diana. This is the best beginning of a vineyard that we have yet seen. We expect to see it again in the fall, and speak of its matured results. We stopped to take another look into Mr. Downing's horticultural ark, where two of a kind are gathered together, that nothing be lost. What we saw here, new and old, could not be described in a volume. We next called on Mrs. Fay, widow of the well-known naturalist. She has a very beautiful and well-kept place. Our time was limited to a very few moments, and those we gave mostly to the vines. The vineyard is quite small, and planted chiefly with the Delaware. The other kinds had been badly winter killed, as was the case also every where else. We saw some very fine fruit on the Delawares, but the gardener does not seem to have fixed upon any system

of training, and the vines are making too much wood by half. The size of the canes on the oldest of these vines would satisfy, we think, the most unreasonable stickler for big wood. Thanking the ladies for their company, we next called upon our friend Mr. Skeele, who has an interesting little vineyard, planted with vines of various kinds. The whole vineyard is prepared like the border of a grapery, and the growth of wood is almost fabulous; in fact, the thing is overdone. To Mr. Skeele it is a source of inexhaustible gratification, and he is working out valuable results: we suspect, however, more for others than himself. Mr. Skeele's best show of fruit is on the Delaware and Union Village. We saw one bunch of Delaware with some of the berries as large as the Concord. With a mere glance at Mr. Skeele's fine lawn and beautiful shrubbery, we hurried on our way to the city, stopping for a moment at A. J. Downing's old place. It was a mere run over the boundary walk, dodging in here and there among the fine shrubbery, a peep into the well-kept grapery, a sharp glance at some very fine Delaware, Rebecca, and Concord vines in the garden, an upward look at some grand specimen tree, a rapid survey of the broad and beautiful lawn, a sidelong glance at the unique conservatory, interspersed all along with approving exclamations, chorused with Mr. Downing's "Come, you'll be too late;" then through the gate, into the carriage, and down to the boat just in time not to be left. Parting here with Mr. Downing and Mr. Woodward, we went on our way to the city.

THE CAYWOOD APPLE.—We are indebted to Mr. Caywood for specimens of this apple. Its chief value consists in its late keeping, its season often extending to September.

A NEW SUMMER APPLE.—We have received from Mr. Geo. Barry, of Alton, Ill., a box of apples in very good condition. He informs us that they were taken from trees fifteen or twenty years old, the only ones he has any knowledge of. They were purchased years ago of a Frenchman who owned a nursery in St. Louis. Mr. Barry adds: "The tree is very vigorous, forms a fine head, and is a moderate bearer, as far as I can learn, though some were quite full this season. It commences ripening about two weeks before the Early Harvest, (this year the 15th of June,) and lasts for a month or more. They usually sell for two or three dollars a bushel in St. Louis. It is a fine looking apple on the tree, covered with a heavy bloom, and good size. I picked about as small a specimen as I could find. Of the quality you can judge for yourself. Can you tell me what it is? We don't know out here." This is a large, handsome apple, sub-acid, with a pleasant flavor. We have never seen it before. We have sent specimens to Mr. Downing, who may be able to tell us something about it. As we have it before us, we can not class it "best," but "very good." Its size, handsome appearance, good quality and exceeding earliness, make it a very desirable fruit. Mr. Barry will please accept our thanks for his kindness.

ORCHARD-HOUSES OF COL. COLT.—Being recently in Hartford, we made a brief visit to Col. Colt's. The leading feature here is the large extent of glass, there being, we should think, not less than 2,000 feet of it. A very considerable portion of this is devoted to orchard-house purposes, such as peaches, nectarines, apricots, cherries, pears, etc. Another portion is used as a pinery. The pines are chiefly queens, and most of them in fine condition. A few have apparently been kept too long in small pots, and are consequently a little brown, but are now recovering their vigor and color, and setting fruit. The fruit trees have been in the house only one year, but are in good condition, growing finely, many of them, especially the peaches, being well set with fruit. In the most forward house a very fine crop of peaches has already been gathered. Part of the trees are in pots and tubs, and part in the ground. The latter are large, well set with fruit, but we think in time will become troublesome. The yield of stone fruit in these houses will be very large. We were not a little disappointed in the small quantity of grapes grown here. The colonel, we conclude, has little taste for this luscious fruit. We have often seen twice the quantity grown with half the glass. The leading features are pines and stone-fruit, and these, Mr. Stubbins keeps in fine order; indeed, the whole place is very creditable to him. There are three pines which we should like to see when ripe. In the orchard-houses we saw tomatoes, corn, &c. The beans and tomatoes looked well, but the corn seemed to rebel against the confinement. Cucumbers are also grown here in great perfection. Between the wing of the dwelling-house is a very beautiful conservatory, regarded as a piece of architecture; but it seemed to us not so good as a plant-house. It contains a unique and beautiful fountain. The grounds about the house are kept in fine order, and are very attractive. There is a picturesque pond, well stocked with fish, and ornamented with a superb fountain. The deer park, with its inmates, is also an interesting object; but the most touching things we saw were the tombs of Mr. Colt's two children. Their position and treatment were very appropriate and impressive, and the fresh flowers daily placed there, spoke feelingly of the parents' love. Our visit was necessarily brief, but quite satisfactory.

THE APHIS IN A NEW POSITION.—While in Newburgh recently, our attention was arrested by the peculiar appearance of the Oats, which seemed to be very black. A close examination revealed the startling sight of millions of the brown Aphis, the plants being literally covered with them. On inquiry we learned that nothing of the kind had ever been seen before. Oats look bad enough, the straw being very short and the heads small. The drought has, no doubt, had something to do with this, but we think the Aphis has done its full share. At the ferry we met a person who had a large vial full, and who desired to know what they were. Mr. Downing then informed us that he had just returned from Connecticut, where he had seen the same thing, but without noticing what they were. The farmers, however, seemed a good deal alarmed, and we think with good reason; for if the

Aphis is to occupy in force this new field, there can be little doubt that the Oat crop will be reduced fully one-third. It is a matter which requires the farmer's serious consideration. The means used by the gardener for their destruction will have to be used by the farmer on a large scale. We should be glad to know in how many localities the Aphis has been thus seen.

FRUIT IN MICHIGAN.—Mr. A. C. Hubbard, writing from Detroit, says: "The season was very wet, cold and backward, but we have had no rain for several weeks, and it is becoming very dry. There will be but very little fruit in this vicinity; no cherries, no peaches. Apples and peas blossomed freely, but a large proportion of the fruit has fallen prematurely; so there will be but little. In the western part of the state, upon Lake Michigan, fruit will be abundant. Very little of it, however, finds its way to this market, most of it goes to Chicago. There is a certain extent of territory upon the eastern border of Lake Michigan, which proves to be very favorable to fruit raising. Since this has been ascertained a large amount of land is being occupied for that purpose, and so far without a failure. This will prove of great value to the West, as fruit in most localities is uncertain."

A STRONG GRAPERY.—Last fall we built a grapery for John Cheney, Esq., of South Manchester, Conn. It is situated in a valley, exposed to all the winds sweeping down it. The house is 20 by 70, with a continuous roof; and there is little timber in it, and that very light, the heaviest piece above the foundation being 2 by 6; but it is put together in a peculiar manner. This spring a fierce tornado came roaring down the valley, uprooting trees, prostrating dwellings, and performing other unseemly and fantastic feats; having no respect for grapevines, it swept down upon this one in full force, *moving it bodily one foot from its foundation*; in the words of Mr. Cheney, "it all went together, *without breaking a pane of glass!*" It has since, with the aid of powerful jack screws, been moved back to its place without breaking a glass. Thus this large glass structure has been moved *two feet* without a breakage. A close examination has not revealed to us the least damage to or weakening of the timbers. Can a parallel case be found?

A LARGE CROP OF CHERRIES.—Our friend Mr. Marié, who has some forty cherry trees, has sent us, as he says in his note, just one half of his entire crop of cherries, with an intimation that he will share the other half with us if we will go to Tubby Hook and dine with him. We have tried pretty hard, but by no kind of arithmetic known to us can we make more than *three* individual cherries out of our half; so we have concluded to back down on the dinner this time. It is a consolation, however, to have seen even so many as three cherries this season.

JOCELYN'S BLACK CAP RASPBERRIES.—Mr. Peck has sent us some of this improved Black Cap, with which we are much pleased. The berry is fully twice the size of the common Black Cap, is more fleshy, very productive, and has the full flavor peculiar to the wild plant. The fruit has brought a good price, and it may prove a valuable kind for market.

EXTRAORDINARY YIELD OF HONEY.—The following surpasses any thing of the kind which has come under our notice, but seems to be sufficiently vouched for. The *Journal of the California State Agricultural Society* says: "However surprising the statement of Mr. Hamilton, we can not doubt any thing which he says. We have known him intimately for about twenty years, and no man's veracity is freer of suspicion." Our readers will probable conclude, after reading Mr. Hamilton's statement, that California can raise "big" honey as well as big trees. The statement is as follows:

"Thirty-five swarms of bees did produce, during the past season, over twenty thousand pounds of honey. I am not surprised that the truth of this should be questioned, for I doubt if the world can furnish a parallel. Not that a hive producing 571 pounds in one season can not be found, but that thirty-five swarms should average that amount, is a great yield. But it is of no good to the public to tell them that a great thing was done, unless they are informed how it was done. This I will try to do in as few words as possible. About the 1st of February, 1860, I left the vicinity of Stockton with thirty-five swarms of bees—twenty-five swarms in Langstroth hives, containing about 1,400 cubic inches, and ten swarms in another movable-comb hive, containing about 2,000 cubic inches each. I took these bees to the town of Santa Clara, Santa Clara County, and I kept them there till the 1st of July, six months. I managed them on the system taught by the Rev. L. L. Langstroth in his work on the honey bee. I fed them on nothing except the honey that I took from them. By the 1st of July the swarms had increased to 270. I removed them, at that time, to the vicinity of Stockton, whence they started, and by the 1st of October the swarms had increased to 500. The large hives, ten in number, have increased to seventy-five, containing sixty pounds of honey each, or 4,500 pounds; the small hives, twenty-five in number, have amounted to 425, containing about thirty-five pounds each, or 14,875 pounds. From the small hives, in September, about 700 pounds were taken, and they afterwards filled 700 pounds; making for the whole the great total of 20,075 pounds. From the above it will be seen that the small hives have been much more profitable. Bees do but very little in Santa Clara after the 1st of July; but in San Joaquin and Sacramento Valleys they do the most after the 1st of July—July, August, September, and October being the best months of the year."—H. HAMILTON.

Correspondence.

MR. EDITOR.—I shall premise by saying, I have no practical knowledge of the management of green-houses. "If but one kind of plants were in a house, and the proper amount of heat were not exceeded, 'ventilation' would not be necessary." Page 275, June number.

Do not plants gather most of their ammonia and carbonic acid from the air. If, as I suppose, the ammonia and carbonic acid in the atmosphere will in a short time become exhausted, will not the house require a "change of air," to enable the plants to obtain their proper amount of these gases.

Do not all plants obtain a portion, perhaps the greater portion, of their nourishment from the atmosphere?

Persons in recommending the use of the wheat drill have said, "Wheat planted in rows is enabled to take advantage of the better circulation of air, thereby gathering more ammonia, which is stored in the plant as nitrogen."

Does your humble student understand you properly? Yours, etc.,
June, 1861, Syracuse, N. Y.

VENTILATION.

[We are much pleased with your questions, and should be glad to have many more of the same kind. They show that, though you may have no practical knowledge, so called, of the management of green-houses, you have some conception of the organic forces which go to the formation of plants. Plants do take up ammonia and carbonic acid freely from the air; but in a green-house these elements will not soon become exhausted; indeed, they will never become exhausted under any ordinary good treatment of plants, though the house were shut up very much closer than we suggested. You seem to have an investigating mind. Go to a green-house, examine its structure, look at the soil the plants are growing in, and think of all the changes that are constantly going on in the soil, the plants, and the atmosphere; think, too, of the food daily supplied to the plants, and then let us know your conclusions. You will not find us backward in aiding you in your investigations. The increased fertility of drilled wheat is undoubtedly owing to the increased surface exposed to the air; sown broadcast and thick, the air can not circulate so freely among the stalks. If you look again at our remarks in the June number, you will find that we call for air in motion and plenty of room. These are essential for the full development of most plants.—ED.]

PETER B. MEAD, Esq.: DEAR SIR.—The apparent pleasure with which you reply to the various inquiries of the readers of the HORTICULTURIST encourages me to ask information in reference to the best work—practical and theoretical—on Gardening; comprehensive, reliable, and recent. Loudon is regarded as good

authority, but his *Encyclopedia* contains many pages of little practical use in this country. Copeland, in his "Country Life," has collated a great mass of matter, but he runs a lightning train, and your foot barely touches the platform at a station before "all aboard," and off he flies to other and diverse themes: a rare jumble of real jewels and bits of poor brass. How about McIntosh's "Book of the Garden"? Is there a late edition of this work, and can you recommend it? Is there anything better?—where can I obtain it, and the price?

Please to direct me also where to find practical, *working* plans of Hot-houses, and the best method of heating them. Above the din of the Boiler war recently waged through the pages of the *HORTICULTURIST*, you urged the promise of a future adjustment of the vexed question. I am confident that my memory is not at fault, and so have been waiting to find the thing done in plan and section. I have Leuchar's "Hot-houses," and could scarcely say too much in its praise as a philosophical treatise on light, heat, and ventilation,—on the atmospheric and hygrometric phenomena of glass structures. But ten years have made many changes in the construction and interior arrangements of buildings of this kind. We would avail ourselves of the new if good—of the old if better. Pardon me; I trespass too far on your time, and can but beg your indulgence as of one long since made an acquaintance through the press, and regarded as a friend. Very sincerely yours,

R. M. L.

[The pleasure with which we answer correspondents is real as well as apparent; the only trouble is, that we get so many we know not which to answer first. To answer them all promptly is a physical impossibility. Nevertheless, send them along; we would not miss them for ten times the trouble they give us; for they often enable us to supply an item of information useful not alone to him who asks, but to a thousand others. Loudon is very useful to have at hand as a book of reference, but you want something different. Copeland does run a race with his readers, and generally outstrips them; but he leads them a pretty race. McIntosh is good, but costly. The price will not be less than \$18. We do not know of a late edition. Thompson is also good, but likewise costly. It will probably cost you \$8. These are both capital works. Among older works for practice, there are Bridgeman, Buist, and others, which will cost you but trifling sums, and may be read with profit. As to such a work as you want on the construction of Hot-houses, &c., there is none that we know of. There are two in preparation, one of which is by Mr. Ellis; but they will neither be published during these war times. No publisher will now even look at a manuscript. We would gladly give our articles on the "vexed question," and some others requiring illustration, but there is a difficulty in regard to the cuts which we can not well explain here. They will come yet in this or some other form. Thank you for your friendly allusions: we like to be brought into close sympathy with our parishioners.—Ed.]

DEAR SIR:—Can you give us any aid upon a point perhaps new?

I have a stout Concord grape vine, almost six years old, upon an open trellis. This vine was entirely unhurt by the past winter, which killed six Isabella vines on the same trellis. On May 10th the swelling of its buds first became apparent. On that day, or the next, I observed a small greenish black beetle, about half the size of a lady-bug, upon every bud. They remained eleven days, and then every one disappeared. I did not attend particularly to their operations until two or three days after their disappearance, when I found that every bud was pierced through by a little blackened hole, as if by a hot wire. Some of the buds were turned almost inside out.

The vine has not sprouted yet, (June 3d,) though other vines, not troubled by the beetle, have grown three inches. I never saw the insect before. Can you give its name and habits?

LABRUSCA.

New Bedford, June 3, 1861.

P. S., June 7th. The Concord is now thrusting out secondary buds—little watery things, intended for 1862; but it is of course three or four weeks behind time. I suppose the wood of this year will not ripen well, so next year the whole vine will be backward, and perhaps not ripen at crop. May not this explain what old gardeners say is a fact, that the Isabella grape ripens later than formerly?

[The insect referred to is the chalybia, and is a great pest. In some localities about here, where it did a good deal of mischief some six years ago, it is now quite unknown. It seems to be of a migratory habit. As many as possible should be killed with the thumb and finger. Their depredations may be prevented to some extent by syringing with a decoction of whale oil soap and lime, which must be several times repeated. The Gishurst Compound we should think would also be good. You may have some trouble in ripening the shoots from your secondary buds. Assist them as much as possible by pinching in the laterals to a single leaf, and in September pinch out the ends of all the shoots. You may in this way ripen your wood, but it will not be as strong as the wood from primary buds, and will not next year produce as much or as large fruit.—Ed.]

MR. MEAD, DEAR SIR,—Please tell us in your next number the very best way to cover Strawberry beds in winter. Leaves blow off with me, and tan bark, while it is a good winter covering, keeps the plants back late in the spring, and brings in grubs in summer. Respectfully yours,

A. D. G.

[It is a pity the leaves blow off, for they are a most excellent covering. A little light brush, or a few corn stalks, would prevent this. Long straw or salt hay makes a very good covering, not much liable to be blown off by the wind. Scatter it all over the plants, but not thick.—Ed.]

PETER B. MEAD, Esq.: I wish to give a few thoughts about the curculio. They may be very erroneous, and show that I am not an "insect man;" nevertheless, take them for what they are worth, and let them pass.

1. The curculio worm winters in the tree.
2. There are two generations of them during one season.

S. showed me last January, while we were looking over the fruit buds on the pear trees, close down to the base of the bud, looking *very* sharp, a little web, the same color as the wood. On opening this web the regular curculio worm was found, in dozens of instances, only about half the size we find him in the spring. We will start with him here at the base of the fruit and leaf buds, and as spring opens and the leaf commences to grow, the worm comes out and begins to feed. It feeds on the leaf a few weeks, then wraps itself in a leaf it has destroyed, (of which you will notice a plenty on the tree at this time,) and drops to the ground, into which it works its way, and comes out the perfect curculio, in season to sting the young fruit and deposit its egg. Then, in turn, this fruit drops to the ground with the live worm that came from the egg in the fruit; the worm enters the ground, and in a week or two comes forth the curculio again, which deposits its eggs this time at the base of the next year's buds, which hatch before the cold weather sets in, and it builds for itself a web impervious to water, and a sure protection through the winter season, unless the point of the penknife brings him out. Thus you see he is all ready, if not molested, to commence work in the spring; and through changing and perpetuating makes his yearly rounds.

Mr. Mead, if it is not the curculio worm that we find in winter on the tree, can you tell us what it is?

P. S. Did that grub I sent you last week get there alive? They have made bad work with my vines. Shoots four inches long on my Rebecca and Diana vines, they have eaten off with a clean cut. What kind of treatment would you give them? I mean those that I can't get between the thumb and finger of my rubber glove. Do you know any thing of their habits? How do they spend the winter?

Very truly,

RUFUS CONANT, JR.

[Your curculio theory is an ingenious one, but our observations, we are sorry to say, compel us to dissent from both your propositions. We have kept the curculio in numbers during the whole year, and have demonstrated, to our own satisfaction at least, that it passes the winter in the perfect or imago state. We have failed to discover more than one generation during the year, though we have watched them with special reference to this very point. If you should hatch out the "worms" found on your pear trees, you would find them not to be the curculio. As you seem to feel an interest in such matters, we suggest that you do so.

The grub sent came to hand alive, and is the larva of a moth. It is very destructive, not only to the young shoots, but also to the fruit, eating through the footstalk, so that the whole bunch drops. They spend the winter in the ground.

The thumb and finger of your rubber glove are a sure remedy, but very tedious. Air-slaked lime dusted over the vines, whale oil soap, Gishurst compound, &c., will help you very materially, but the application must be repeated several times. "Eternal vigilance is the price of freedom" from insect enemies.—Ed.]

MR. PETER B. MEAD:—I was much pleased with the manner in which some questions of Mr. Geo. H. Goodwin, in your January number, were asked and answered. They were most of them questions that I have wanted to ask myself; but I could not help wishing that the first question had been in this form: "Are trees which come from the nursery with a few large, long roots, better than those with *a few* fibrous roots?" for we must all agree that a tree with *many* roots is better than one with only *a few*, let them be of whatever character they may. Mr. L. E. Berckmans has, I believe, expressed the opinion somewhere in the *HOORTICULTURIST*, that fibrous roots to a newly planted tree are of doubtful value. I do not endorse this, but I am fully convinced that the first and most important requisite for a young tree is, that it shall be furnished on all sides with a sufficient number of strong brace-roots to keep it in its place, and protected from being swayed about by winds and storms; after this more fibrous roots the better, provided they are not so numerous as to get matted or entangled together, so as to prevent their being kept in their original position. In that case I should cut them away, unless the circumstances would permit the removal of the earth with the roots. A tree without some fibrous roots that may be taken up with it, is certainly not worth much, but may sometimes be made a good tree by severe shortening in both the top and roots, and being planted in soil favorable to the production of roots. And this brings me to the question that I want to ask. Why will some soils produce more roots in proportion to the size of the tree, than other soils? A fact or two will not be out of place here, I think. Two years ago, I purchased some Norway Spruce that were grown upon light, sandy soil. They were from one to two feet high, had made a good growth the previous year, and, I supposed, were every way good trees; but on taking them up I found they had roots more like standard pear-trees than any thing else I can think of. They were almost destitute of fibrous roots. I planted part in the fall, and they nearly all died; the rest in spring, and they nearly all lived. They made a growth the summer following of three to six inches, and when planting time came again you might take a spade and go to any one of them, and cut down the length of it around the tree, say eighteen inches from it, and lift it out without losing off a pound of the soil; the roots were so woven together—so to speak—through the whole of it. I think trees on the sandy soils along our lake shore, have fully one-third less root than those grown on the heavier soils more in the interior of the State. I refer to nursery trees generally. There is also a difference in varieties in this respect in the same ground. In root-grafted apple-trees the difference is a very marked one; and the Rambo and Swaar may be taken as

an example of those with least roots, while Bough and Golden Sweetings are among the best-rooted. If you will explain these things to me you will do me a great favor.

Yours truly,

GEO. W. DEAN.

Welshfield, Geauga County, O.

[The above very suggestive letter was mislaid, or it would have appeared sooner. In regard to the form in which you put the question, we would remark, that a tree with a few roots of either kind is a most undesirable thing, and there is not much choice between them. If planted in a suitable soil, nature will at once begin to form roots, for feeding or for support, as the one or the other may be most needed. A good nurseryman should never send out a tree deficient in fibrous roots; for where these are duly present, there is never a lack of the other. In the case of the vine, there are two quite distinct methods of making "layers," the one producing scarcely any thing but long roots, and the other a good system of fibres; and it was between these we supposed Mr. Goodwin wished to choose, and we advised him accordingly. We have no knowledge of Mr. Berckmans having expressed the opinion you allude to; but of this we are convinced, that no tree can have a better support than that furnished by a good system of fibrous roots, which furnish a multitude of points of resistance. Such a tree will seldom require a stake, except in a very exposed place; indeed, a stake is very often a palpable evidence of either bad planting or a bad plant, except as noted above.—Next, some soils produce more roots than others, simply because they are richer in carbonaceous matter. If you had planted a part of your Norway Spruces early in September, you would have lost as few as you did in the spring, and have had the same growth and masses of roots. Your case is an additional evidence that something more is needed than long roots for mechanical support. There is undoubtedly a difference between varieties of apple and other trees in regard to the quantity of roots they make, dependant chiefly upon their native vigor. In respect to root-grafted apples, the piece of root upon which they are grafted gradually dies, the graft throws out roots, and the tree is ultimately in the condition of one made from a cutting, dependant altogether upon its own system of roots: these roots will vary mainly according to the aptitude of each particular kind for this mode of propagation, though other and local causes may sometimes coöperate to produce the same results. This explanation, we think, sufficiently accounts for all your phenomena. If not, let us know wherein.—Ed.]

MR. EDITOR,—DEAR SIR,—Since you seem to take so much pleasure in answering the questions of the ladies, I will venture to ask two: 1st. Which is the best Strawberry for the garden? 2d. Which is the best Grape? I have only a small place, and think one kind of each is enough for me to grow, but I want the best. Will you please answer these questions for me? Respectfully yours,

Mount Vernon, July 20th, 1861.

ANN S.

[You are short and sweet, Ann—we mean the letter, of course. We are always

ready to answer the questions of the ladies, provided they are not *two* personal. We don't exactly know what might happen in that case. The best Strawberry for the garden is Triomphe de Gand. The best Grape is the Delaware. You do wisely in not planting many kinds, if your place is small; but we suspect you will want more by-and-by.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY.

The following Address was delivered by President DEGRAUW at the First Conversational Meeting :

Gentlemen of the Horticultural Society :—We have assembled this evening to discuss the subject announced at our last regular meeting, "Horticulture and its Influences." I feel most forcibly the truth of my inability to enter on the highway of a subject so vast and unbounded, but I have no doubt that there are others present that will take a part in the proceedings of this evening, and give you the enlightenment that it has been my misfortune to fail in accomplishing.

We have a high sanction for the subject which we have assembled to discuss. When the Beneficent first chose a scene to occupy our intellectual and moral faculties, "planted a garden feastward of Eden," "He there" put the man whom he had formed, and when Earth and "all which it inherit" shall have passed away within the precincts of a future world, the family of man shall partake of joys that are depicted under the alluring imagery of a garden. Refreshing bowers and luxuriant verdure, a pure crystal stream, sweet fragrance and delicious fruits were man's first blessedness, and are the graphic emblems of that final bliss which is reserved for him. It was a Paradise that we have lost; we are to regain a Paradise; while we yield to the emotions that our subject suggests, we may be enlivened, therefore, by this interesting thought—We are engaged in the promotion of an object suited to man's highest earthly destinies.

It is calculated to afford the intellect abundant themes, to which a patriarch's long life might with unceasing gladness be devoted; for it extends above, beneath, around us, rare beauties that are without limit, and varieties without end; it is replete with the animating pleasures of discovery and the calm delights of contemplation. It is calculated also to affect us by yet higher and more wholesome influences, for it can act upon the heart with a benignity that has power to allay the angry passions of the breast, it can promote our peace on earth, and it can fill us with pure sentiments and holy breathings.

Let us, then, exult this evening in these attributes of our subject; first, we have said that it was calculated to engage the intellect. There is no human science that is more ample in its range, or more attractive in its multiplied allurements; it unfolds to the astonished view a living landscape—the wide world—and its votary is pointed to the eastern and western hemisphere, it leads him, in full vision of the extended scenery to look abroad; it then invites his contemplation to the bold draft that marks its outline.

In all that may appear so wild and scattered in these multitudes that teem throughout the vegetable kingdom, it discerns an exquisite gradation,

“ From the proud wood whose head the sky assails,
To the low violet that loves the dale.”

And it disposes all, with a regard to that established order, which is proclaimed by their peculiar characteristics; with a philosophic eye it dwells upon the parts of which they are composed, and it again develops every where the rudiments of heaven's first law. It views the external forms which plants exhibit, and sees them to be well ordered both for nourishment and reproduction. It names, it classifies, and it describes the gifts of Flora. Within the bounds of four and twenty classes, it brings no less a multitude than thirty thousand species. It beholds their internal organization, it explains the physiology of plants, it sees them pass through their successive states, from their incipient existence to the period when they have attained maturity, and sent again into their native dust. Their numerous causes of diseases are also carefully detected; the favorite places of their habitation are distinctly marked, and whatever are connected with the peculiar traits which they assume, is made a theme of accurate and laborious investigation. The details resulting from this scrutiny abound in interesting facts.

But it is the province of our subject to indulge a range yet wider. It investigates the geographical distinction of the vegetable families, in which it every where discovers a variety the most pleasing, vegetated by the established general principles. It explores the surface of the globe, with regard to its various qualities of soil and earth, and here, geology and chemistry, its handmaids, decorate it with new charms. It is concerned also to improve and renovate the earth by fertilising agents, and the vegetable animals and mineral kingdoms here conspire in its cause.

With an admirable ingenuity excited by its needs and its emergencies, from age to age it has contrived implements, machines and other articles of mechanism. In the history of these is comprehended much to entertain and discipline the mind.

With parental care, it rears appropriate structures for the nourishment, security and preservation of its household. It erects large edifices, both for use and ornament, and it disposes all with a regard to the just principles of taste. Its gardens thus are landscapes, where the useful and agreeable, as lights and shades in the chiaro-oscuro, charm the eye.

These lovely scenes are the abodes of the amiable genius of Horticulture. She ranges the wide world with an indefatigable assiduity. She gathers, and transfers, and nationalizes, and adapts to our use whatever can regale the senses. And it is her enviable occupation “to dress and keep” what she has thus gathered and arranged. A boundless theme is here presented—it is the application of her art. It is to sow and plant, to prune, to train, and to transplant, to propagate by

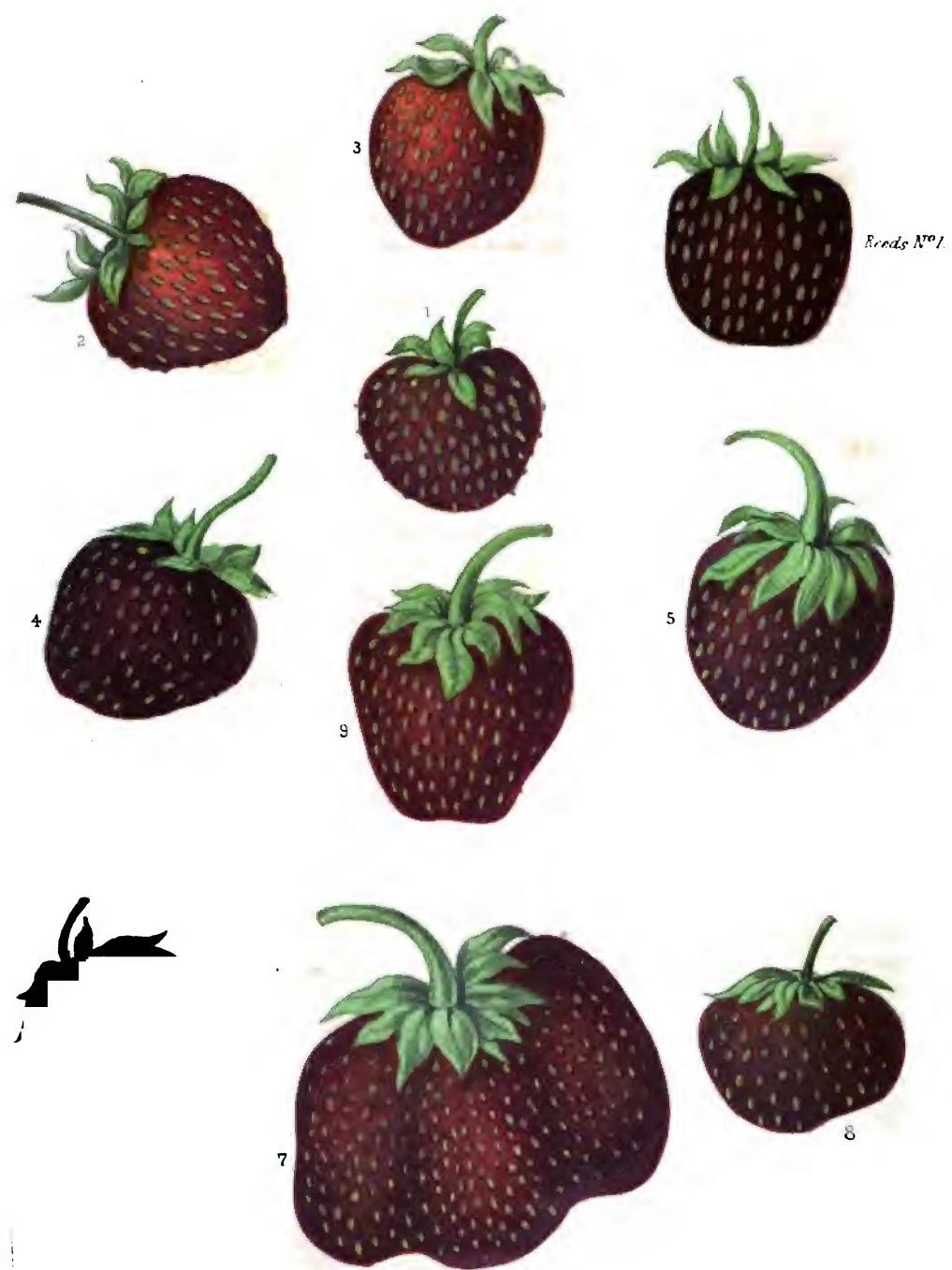
grafting, cutting, budding, layering and inarching. And connected with these operations are remarkable phenomena that lead the mind to pleasing and elevating thoughts, for it may thus dwell on many of the most interesting pages in the book of nature.

Both as a science and as an art, if it be properly appreciated, Horticulture is abundant in resources. It has occupied the meditation of the learned in all countries and all periods of the world, as is demonstrated by its literature. Within its gardens are inscribed the names of Hesiod and Homer, Aristotle, Xenophon and Aurelian, Cato, Vano and Palladius, Martial and Horace, wandered there. Beneath its shades and in its cool retreats, a Virgil could compose his Eclogues. Dioscorides and Pliny, too, and Columella, lingered in its fragrant walks. All these commend the fascinations both of Flora and Pomona. To their shrine each realm of Europe has sent multitudes of votaries. From Britain the ingenious Bacon, and the philosophic Evelyn, and the poetic Cowley, mingled in the throng, and in their train were Milton, Addison and Pope, Thompson, Shenstone, Cowper, Mason, Walpole, Davison, and the illustrious Sir Joseph Banks; and from the Continent, amid a bright array of learning and genius, we may recognize a Buffon, a Dulille, and a Saint Pierre in France; in Germany, a Hirschfeldt and a Herder; in Switzerland, Conrad Von Gessner, and in Sweden, the renowned Von Linne. Such famed scholars and historians, poets, statesmen and philosophers, commend our subject by the various contributions with which they have themselves adorned it. To dwell in contemplation on those spots, which by their presence they have consecrated, gratifies the generous mind. And other pleasing themes await the votary of Horticulture. With a retrospective view, he may recur to its ancient history and be refreshed by its alluring visions as they pass successively before him. He now sees man's first place of bliss,

— “planted with the trees of God,
Delectable, both to behold and taste.”

Now the gardens of the Hesperian nymphs, with every classical embellishment, attract his eye. He sees the Babylonian terraces, which, by the magnificence of art and the luxuriance of nature, formed a wonder of the world. The pleasure grounds of Solomon, described in Scripture, and the gardens of Laertis and Alcorius, which Homer has immortalized; the far-famed Sardian retreats, which Cyrus cultivated; the Panchean paradise and the Orontran grove, here rise in their enchantment. Then appear the celebrated vale of Tempe, and the Academus and the Lyceum, each associating nature in her loveliness with philosophy in all its pride. The splendid works of ancient Roman sumptuousness are seen displayed by a Lucullus and a Hortensius, and to those villas that extend round the Imperial City.

[To be continued.]

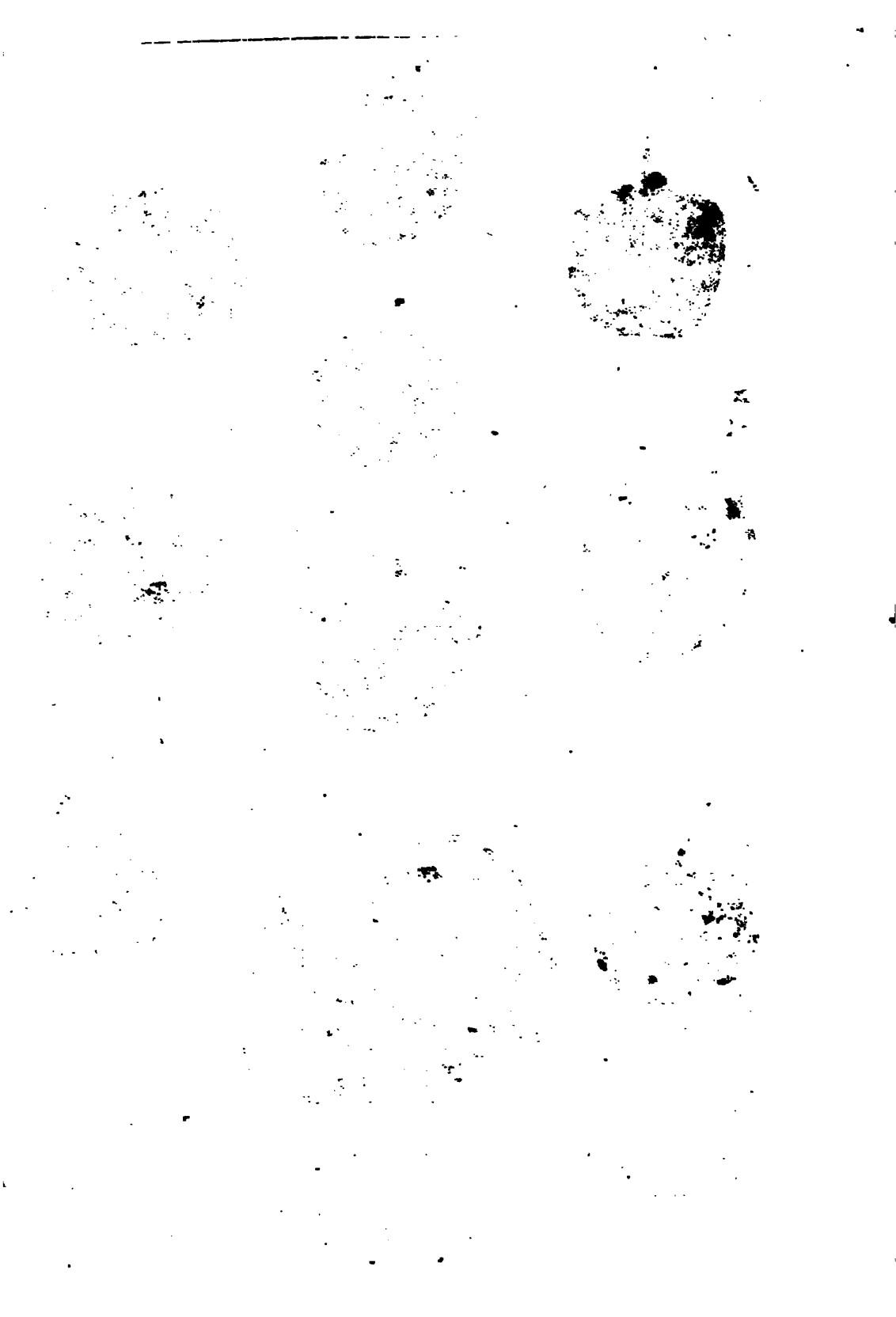


N^o1 Prinsep Imperial Sorrel.
2. Jesse Read.
3. Ladies Fine.

N^o4. Read's Black Pine.
5. Delice D'Automne.
6. Haarlem Orange.

N^o7 Kitley's Coliach.
8. M^cAvoy's Extra.
9. Compte de Flandre.

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Hints on Grape Culture.—VII.



UCH as we love the subject of grape culture, we approach our next topic with some misgivings, produced in a great measure by the effects of the past winter. We may not, it is true, have another such in many years; but we have been of opinion for several years past that our seasons are changing and becoming more trying.

The "cycle" may or may not have been completed during the past winter; the next may be better or worse; but of that we know nothing. The only safe course, therefore, in recommending *What Kinds of Grapes to Plant*, is, to take for a basis what we already know, not what we would wish. The interests involved in this matter of grape planting are so great, that we are impelled to take the only safe basis, the facts already obtained. We prefer, in brief, to be on the safe side, and to be so cautious in our recommendations that no man shall hereafter reproach us with having misled him. We may not go as far as some would wish, but quite as far, we think, as our knowledge and experience, and a due regard to the interests of our readers, will warrant.

Let us now examine such kinds as may be safely recommended for "general cultivation." For this purpose we want a grape constitutionally healthy and vigorous, productive, of fair size in bunch and berry, of at least "very good" quality, and having such hardiness and early maturity as to fit it for all sections of the country. We have here requirements hard to be met at present, but we shall, no doubt, in a few years have a number of grapes that will fully meet them. At present the number is very limited. Of these, we unhesitatingly place the *Delaware* at the head of the list. It exceeds our requirements in one particular, in being of the "best" quality. If all grapes for "general cultivation" were required to be of the "best" quality, we should, with our present experience, be compelled to stop short with the *Delaware*. Last fall we should have placed the *Diana* second, and would like to do so now; but during the past winter it has in many places been killed, when left fully exposed. Were the practice of covering the vines common, all doubts in regard to the *Diana*, as well as some others, would be removed, since it ripens sufficiently early. In quality it will rank among the best. We think, on the whole, that the *Concord* may be added. Inferior in quality to the *Delaware*, *Diana*, and some others, it is still "very good," and nearly meets our other requirements. We were of the first, we believe, out-

side of those interested in its sale, to speak a fair word for the Concord, and to predict that it would take its place by the side of the Isabella, as a market-fruit.

Our list for general cultivation we shall have to close here, to the disappointment, no doubt, of not a few; but it must be borne in mind what our requirements are, and that we are recommending *table* grapes only. When speaking of grapes for *wine* and *amateurs*, others may be added to the list. Some may think that we should have added the *Isabella* and *Catawba*, since they are on the list of the Pomological Society; but we do not hesitate to say that they have no right there whatever, and never should have been placed there. There never has been a time when the *Catawba* was fit for general cultivation, and that fact is now almost universally admitted. We take no exception to its fine quality; that all recognize; but its late ripening and tenderness unfit it for cultivation in half the country; moreover, it rots more than all other grapes together, and infects every thing within reach of it. The *Isabella*, too, is a good grape, though much inferior to the *Catawba*; it is not early and hardy enough, however, for general cultivation. Both these grapes should, therefore, be stricken from the general list of the Pomological Society; their proper place is for localities.

There are some of the new grapes which we think will, in time, take their place on the list for general cultivation; but they have not yet been sufficiently tested to speak of them confidently; such, for instance, as the *Cuyahoga*, *Creveling*, *Hartford Prolific*, and others. The last has been some time before the public, but its character is not yet satisfactorily established. The *Cuyahoga* and *Creveling* are much less known, but we have formed a favorable opinion of them; but all of them must have been tested over a wide extent of country before we can form a just estimate of their fitness for general cultivation. It is much in favor of a grape for this class that it originated or has ripened its fruit for some time in a section sufficiently rigorous to test its hardiness.

If, now, we lessen our circle a little, we shall be enabled to enlarge our list. Wherever the *Isabella* ripens its fruit unsafely, we may name in addition to it the *Diana* and *Union Village*. We are tempted to place the *Rebecca* here, because we find it, when fully established, nearly or quite as hardy as the *Isabella*; it is a much superior grape.

Contracting our circle again, we may add the *Catawba* and *Anna*; and either here or on the preceding list, the *Allen's Hybrid* will probably take its place; but it is not yet sufficiently known to locate it. The *Catawba*, as before remarked, is very liable to the rot, which has caused its culture to be entirely abandoned in some places. This is deeply to be regretted, since it is one of our best grapes; but the fact ought to be known. We have almost ceased to recommend it on this account alone. The *Pauline*, *Brincklé*, *Maxatawny*, (a very promising grape,) and others, must go some distance south of New York. There are many new grapes before the public, but we have seen too little of them to give them a place yet, though we have most of them growing. If any of our readers think we have

omitted in either of our lists any grape that really belongs there, we should be glad to hear from them. We have no objection at all to having our lists criticised. Of more local varieties we shall say something hereafter.

Of the small berried grapes, we may mention as hardy the Elsingburgh and Lenoir. Though the berries are small, the bunches are large, and the quality excellent. The Herbemont requires covering or shelter, and properly belongs further south.

A few words may be added in regard to suitable kinds for the garden, where a succession of fruit is usually wanted. Nothing should be admitted here that is not really "best," except among that small but useful class of amateurs who can afford to indulge in the luxury of trying every thing new. Of kinds well known a choice selection for the garden may be made from the Delaware, Diana, Rebecca, Union Village, Anna, Isabella, and, but for the rot, Catawba. To these will probably be added, Allen's Hybrid, Cuyahoga, Manhattan, and others.

LANDSCAPE ADORNMENT, No. XV.—ROADS, No. 3.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

It is a simple thing to show how to spend money, no talent whatever being required to commit the most wasteful extravagances. In landscape work, the error of extravagance is one most frequently committed, and tends, by example, to prevent many from gratifying their tastes. To illustrate the manner of executing work that shall be more nearly perfect and beautiful, and to do it at the same time with strict economy, is not so easy.

The more perfect one's knowledge is of the various means of producing landscape effects, the less will be the expenditure, for the reason that what he does is systematic and business-like, and he knows precisely the result he intends to accomplish.

There is scarcely a better illustration of misspent time and funds than home-made performances in road-making. He who constructs a road each year, or at irregular periods of his life, scarcely takes the trouble to acquaint himself with any of the scientific principles belonging to road-making, and naturally falls into and repeats the accumulated blunders that have gone before him. Undoubtedly it is a captivating pleasure to do all one's own work, yet it is an unsatisfactory reflection to find that your neighbor has attained far more durable and beautiful results at one half the expense.

Road-making is a scientific pursuit, and to follow it successfully requires a thorough knowledge of its principles. Dr. Lardner says, "I do not know that I could suggest any one problem to be proposed to an engineer which would require a greater exertion of scientific skill and practical knowledge, than laying out

a road ;" and we doubt if he could have found a man in this country who would not feel grossly insulted if he were told the plain truth, that he is ignorant of the first principles. There is money enough squandered every year in building ornamental roads in an improper manner, that, if judiciously expended, would add materially to the embellishments of a place, instead of being worse than buried a couple of feet below the surface.

The limit of permanence and durability ought to be a study with those who construct roads, instead of adopting the expensive fallacy, that if one foot of broken stone is good, two or three are necessarily better.

The chief characteristic of a good road, aside from beauty of location and alignment, are smoothness, hardness, and permanence, and the most desirable of all is to get these with the most economy of means; the true way to do which is to adopt at once those principles which long years of scientific investigation and experiments have proved to be good.

The true location of an ornamental road would be in graceful flowing lines, the grade of which should be distributed uniformly throughout its length.. Its position should be such that no more surface water than falls on it should flow over it; it must not be the channel towards which, and through which the surface water of adjoining and higher land will flow. One of the most important considerations, after a well-studied location, is thorough drainage wherever it is required. The earth bed should be dry and firm, and prepared to the same degree of convexity that is intended for the finished surface. The depth of the excavation for the road metal need not exceed six inches as an average; it will, however, in adjusting the grades, be more in some places and less in others; but the whole thickness of road metal, including the binding, need not under any circumstances be over six inches.

There are two well-known methods of constructing broken-stone roads, those of Telford and McAdam; the former having a rough pavement of stones well wedged or chinked down so that they can not move, and covered with a layer of broken stone, $2\frac{1}{2}$ inches cube, and finished with a blending material of good, clean gravel $1\frac{1}{2}$ inches in depth. The McAdam plan is to have all the stone broken to $2\frac{1}{2}$ inches cube, put on in three layers, each of which is to be worked in by use, and finally becoming consolidated into a firm, compact, impenetrable body, without the aid of any other material.

Of late years a third plan of making broken-stone roads has been introduced by Mr. Bayldon, an English engineer of high repute. It embraces portions of the Telford and McAdam plan, with some admirable improvements. It consists of putting on the broken stone, $2\frac{1}{2}$ inches cube, in a single body, rolling it thoroughly; then $1\frac{1}{2}$ inches of blending material, either gravel, ashes, fine chippings of tough stone, scoria, or furnace cinders, and thus opening at once to the traveling public a finished road, instead of compelling them to consolidate a mass of broken stone, as in the McAdam plan.

The Telford and Bayldon systems are the only two that should be used for metaling an ornamental road, the McAdam system being objectionable from the length of time required to compact the mass, and from the fine dust ground from the stone to aid the process of consolidation.

We have stated that six inches of broken stone are sufficient for an ornamental road; but if the Telford plan is used it may have to be a little thicker; not necessarily so, but for more convenience in laying it. In a road of this thickness, the only trouble will be with the frost; if the ground be well drained, and the road well rolled when the frost comes out, no harm will be done. On public highways sustaining a continuous stream of trade and travel, four and six-horse loaded teams, and rapidly driven post coaches, the average thickness of the Telford road was 11 inches. Mr. McAdam considers 10 inches sufficient to carry the heaviest traffic, while on the Leeds and Wakefield Turnpike, in England, in 1841, which was constructed on the Bayldon system, the entire thickness was 7 inches, and in 1857 was in full use and good repair, although worn down to an average depth of $3\frac{1}{2}$ inches, in some places being only 1 to $1\frac{1}{2}$ inches thick.

For an ornamental road, or, in fact, for any other, we give our preference to the Bayldon system. We believe, all things considered, that it is the cheapest and most durable road; that the expense of breaking up the stone is less than the extra hauling and labor of laying the Telford pavement; and that it presents the simplest form of construction, so plain that any one from working drawings and specifications could make a road.

Now this doctrine of using a thin layer of materials, properly and scientifically put together, and which has been thoroughly tested and established for from 30 to 50 years, is universally scouted among builders of ornamental roads, and we suppose for the reason that it is human nature to deride or break down that which we can not understand, or which is at variance with preconceived notions.

We have within a week had occasion to examine ornamental roads, on which the labor of excavating from eighteen inches to two feet in depth, and the hauling alone of the materials to fill it up, have actually cost more money than an accomplished engineer would require to build a first-class road, one that will outlast two generations, and pay for itself twice over in the saving of repairs.

The prevalent manner of constructing broken stone ornamental roads is utterly devoid of any thing like skill or principle. A mass of stones of all sizes, from a foot to eighteen inches in depth, covered with about six inches of gravel, is the whole story; and on the principle that two wrongs make one right, the open stone work is to drain the gravel, and the gravel is to prevent the stones from rising to the surface. Such roads never become consolidated; the efforts of the larger stones to rise on top, keeps the road always open, and requires constant attention, while a properly constructed road grows better by use, and soon unites into a compact solid body, through which weeds can not grow, and which can be kept in a neat and polished order with the lightest care.

[There are probably as many failures and as much money foolishly wasted in the construction of ornamental roads, as in any other one thing connected with landscape improvement. We do not think Mr. Woodward has put the case one bit too strong. Nine out of ten men think they can build their own roads, and this is the reason why nine out of ten roads are such wretchedly poor things; besides, these poor roads very often cost twice as much as a good one. The plea usually is, "Oh, I can't afford to pay a professional man to make my roads;" when, in fact, a professional man would often save half the expense; we mean, of course, a man who understands his business.—ED.]

GROWING MELONS IN POTS.

SINCE the increased attention given to "orchard house" culture of late, every thing relating to the cultivation of fruits in pots is read with interest. Mr. Robert Fish, in a late number of the English *Journal of Horticulture*, gives the following directions for growing Melons in pots; they will in many respects apply to the treatment of the Melon here. Except, however, for early forcing and the preparation of plants for early fruiting out of doors, this mode is more interesting to the amateur than others. Mr. Fish says:

"Melons may be grown in a green-house from July to October, and without any bottom or other artificial heat; but only well if they have the green-house either to themselves, or have such plants as neighbors as would stand a rather close, moist heat when growing. If the house was kept airy enough and cool enough to keep Pelargoniums, Fuchsias, and things of that sort in steady vigor, then Melons would have a struggle to do well, and could only be expected to fruit well in a fine, sunny season. Otherwise if a house can be closed early in an afternoon, and only a little air given early in the morning, but when the plants are growing freely not a vast deal given during the day, the Melon will grow under glass alone for the time specified, and rather better in a pot than when planted out, as its natural luxuriance will be moderated.

"We have had nice fruit from eight-inch pots, extra well attended to with manure waterings, but, in general, we prefer the pots to be fourteen or fifteen inches. We then prefer a plant that has been stopped at the rough leaf, and one shoot selected and tied to a little stick, and all the other buds nipped out. We would shift this plant from a sixty and a forty-eight pot into a thirty-two, and then when getting full of roots transfer the plant at once to a fourteen or fifteen inch pot, using rough, stiff mould, sometimes alone and sometimes with a little leaf mould, and we think the plants do as well with the rough soil alone. This is used neither wet nor dry, and squeezed lightly round the ball. If the soil is so stiff as to have a portion of clay in it, and thus might be apt to crack in a sunny day, we used either to put a little moss on the surface, or a little rough leaf mould or decayed dung, just to prevent the sun drawing the soil from the sides of the pot.

When we were forced to use rather light, sandy soil, we have mixed a little leaf mould with it, and used it rather damp than otherwise, and beat it round the balls and the sides of the pot with a wooden pestle. I say used, because for two or three years I have had less room for this kind of culture; but previously I have adopted it whenever there was a spare place in the house, sometimes training the plants to a stout stick, sometimes setting them on the floor of a house and training them to a string fastened to the pot and the rafter above, and sometimes to a little trellis in a pit in the usual way, and, however done, have had less trouble in pruning and better fruit as respects quality, because, so far as I am able to judge, the check given to mere luxuriance threw more of the sap of the plant into the fruit. Well, being thus potted, watering was given with some care, so as not to greatly saturate the soil with moisture before the roots were taking possession of it. As the shoot grew all the buds appearing at the axils of the leaves were removed, until the plant was two or three feet in height, according to the room that could be given it. The point of the plant was then nipped out, leaving four or six joints below it from which the buds were not removed. These soon throw out shoots, generally showing fruit at the first or second joint, and the process of stopping must be attended to as alluded to the other week.

"From two to four fruit is a fair crop. We prefer the plants to be trained upright or to a trellis, though we have had good crops from pots, the pots being sunk in a bed, and the plants trained over the surface in the usual way.

"Guano will do the plants good, especially if not used strong—say two ounces to a four gallon pot; and top dressings of dung, too, will be useful; in fact, we prefer this rich manure watering to incorporating any thing rich with the soil, as there is less danger of cankering at the collar of the plant. We found it also advisable to have a small mound round the collar, and another small mound round the side of the pot; the latter not only tended to prevent the soil cracking there, but the water being poured in a shallow trench between the sides of the pot and the collar of the plant, the latter was not easily wetted, and the moisture could not escape by the former without wetting the earth in the pot thoroughly and regularly. As the fruits approach ripening, the pots would be better if plunged, or half-plunged, or covered with mat or calico, etc., because too much dryness then might be hurtful, and too much moisture would be apt to militate against flavor. Except at that period I would as soon have the pots stand exposed as not. Though thus recommending chiefly pure loam and manure waterings, instead of rich soil at once, we hope if our correspondent tries the pot culture, he will not use guano, or hen-dung, or even fresh deer-dung, so strong as to kill or injure the plants. It is best and safest to use it weak and often."



CACTEÆ—REMARKS ON.

BY DANIEL BARKER, HARTFORD, CONN.

THE Cacteæ are a very numerous and exceedingly interesting tribe of plants, which we think ought all perhaps to be included in one genus, divided into several sections. At the same time, it must be admitted that they are so numerous and varied in their forms, that it is more handy in the system divided into the numerous genera, as we now find them; but in our practice we have found that such genera are merely nominal, as they hybridize with one another—many of them at least—as we have found by experience. We had under our charge for ten years, a collection containing upwards of 15,000 plants of the order Cacteæ, which contained *Mammillaria*, *Melocactus*, *Echinocactus*, *Cereus*, *Cactus*, *Epiphyllum*, *Pereskia*, and *Opuntia*. From *Epiphyllum Ackermanii* and *Cereus speciosissimus* we raised several hundreds of seedlings, many of them quite distinct, most of which produced flowers of the size and shape of *Epiphyllum* with the beautiful color of the *Cereus*. Those who cultivate *Epiphyllum Macoyii*, can not fail to recognize in the flower the form of the *Epiphyllum Ackermanii*, with the color of *Cereus speciosissimus*.

The *Melocactus* and *Echinocactus*, we have hybridized with perfect success. The progeny are, almost without exception, most grotesque, and in the highest degree interesting to the admirer of succulent plants.

All the Cacteæ grow in similar situations; hence they require nearly the same treatment. The differences between them are those of shape, size, and color. With the exception of about two, which are found in the south of Europe and one in Missouri, they are all natives of South and Central America. There they inhabit the most dry and barren situations on the slopes of the mountains, and many of them upon rocks where water never stagnates. During the dry season, which is by far the greater part of it, they remain quite inert, many of them retaining, if not their freshness, at least their plumpness, I presume by absorption through the epidermis; while many others become flaccid, and may be twisted about in any shape without sustaining the slightest injury. During this season they show but few of the ordinary characters of vegetation. In this state they are merely pieces of matter, the vegetable quality and life of which are inferred from the texture of the surface, and which is not unfrequently quite glossy, of various shades of green, red, brown, and sometimes with beautiful tints of crimson and carmine. Many of them are covered with spurs and prickles, usually in tufts, some straight, others curved or hooked, quite formidable in appearance. In habit, these interesting plants differ from every other class, in having no distinct difference of petal, wood, and bark, or of leaf and stem. How, therefore, can the name *Epiphyllum* be a correct one? As we understand the term, it implies that the flowers are produced or grow upon the leaves,



whereas *there are no leaves*. The entire substance of the plant is always a mass of matter, which might be called a stem or frond, but never a leaf.

In all the tribe, so far as we are informed, the principle of vegetable life is not only stronger and more generally diffused, but more indestructible than in almost any other tribe of plants. The smallest portion of a stem will not only emit roots, but in due time become a perfect plant; and a piece from the side or bottom is equally adapted for the purpose as from the end. If taken from the end, it matters not which end is placed in the earth to root.

The capacity of remaining inactive for such lengthened periods of time, and then being so easily restored to growth and flowering, accords well with the natural situation of the plant, and is, moreover, of the highest practical service in their artificial culture. It is not unusual, upon the hot, desolate locations in which they grow, that they are deprived of rain for a whole year, which is caused by adverse currents and other circumstances; in this parched up state they do not die, but merely remain inactive till the wet season returns, when they immediately start into growth, and flower.

During the summer of 1841, we had placed, by way of experiment, some plants of *Melocactus Ottii* and *communis*, *Echinocactus subgibbosus*, *E. melocactiformus* and *intricatus*, with several plants of *Cereus*, *Mammillaria*, and *Cactus*, upon the upper shelf, where they received the direct rays of the sun in the pine stove. In this torrid situation they remained for twelve months, without any water whatever, after which they received a copious supply, retaining them in the same situation. The result was five plants dead; forty-five, after having been in a perfect state of inactivity for twelve months, upon having a good supply of moisture, began to grow immediately, and many of them produced very fine flowers. After this we never experienced any difficulty in flowering the beautiful *Echinocactus Eylesii*, *formosus*, *nobilis*, with many others. I do not wish to be understood that we placed 15,000 plants upon the shelf of a pine stove for twelve months, to starve them into subjection. Our practice was, after a plant had flowered, or refused to flower, after gradually withholding water, it was then placed in the dry stove (a hothouse for plants requiring no moisture, the temperature of which was about 80° Fahr.) for three, four, or more months, according to circumstances, such as the natural habit of the plant, the time when the plant would be required to produce its flowers, etc., all of which the practical man will understand, and all of which can be understood by any intelligent mind, by observation and inquiry, by becoming acquainted with the geographical distribution of plants, the all-absorbing study of botany, with a thousand other delightful researches in the volume of Nature.

We believe the point has been fully proved, at least to some extent, particularly with the growers of the beautiful order *Orobideæ*, that the growth and flowering of many plants are more energetic in proportion as they have been in a state of inactivity. We believe the rare flowering of the night-blooming *Cereus*

to be entirely owing to keeping it in a state of activity throughout the entire year.

A case in point. We had a plant of *Cereus grandiflorus* attached to the back fruiting pine house, covering a space of 30 by 4 feet, or thereabout; in this house the air was moist from the watering of the plants and other causes. Here the *Cereus* grew and flourished amazingly, producing its singular roots from all along the stems in the wildest confusion, but seldom produced its flowers. In using the same house as a dry stove, the *Cereus*, instead of being of a fine, lively green color, suddenly became brown, and somewhat rigid. Water was withheld for a season; when again applied by the syringe upon its stem, with a good supply of manure-water in the tub wherein it was growing, it produced its splendid odoriferous flowers without stint or stay for several weeks in succession. The inference to be drawn was, in cultivating the Cactæ, of whatever species they might be, to place them in a house by themselves; or, if that is not practicable, to keep them as far apart as possible (during their period of rest) from other plants that require frequent watering all the season. Unless kept quite dry for a season, their awakening into growth and flowering will be found to be much less vigorous. During this time, wherever they are kept, all water should be withheld, not only from the soil wherein they are growing, but in the air by which they are surrounded. In this state they are subject to little injury from variations of temperature, unless it should be near freezing, which they can not bear. A rather low temperature during the time of rest, is more favorable than otherwise. As soon as it is perceived that their vigor is coming into action, the temperature should be raised, and water given in such quantities as to completely drench them, (but not in such quantities as to turn them into aquatics.) By such timely treatment most all the species can be brought into flower every year; and as many of the flowers of the Melocacti and Echinocacti are exceedingly beautiful, the proper management of them would contribute very much to the general appearance and richness of collections of flowering plants.

There is another circumstance to which we would invite the attention of those who have no hot or green-house, and which should enhance the value and interest of this singular and interesting class of plants, viz.: for the portable parlor plant case, wherein they may be grown the entire year, they are invaluable.

As we shall have occasion to revert to the Cactæ, as well as to the plant case, soon, we shall say no more upon them now.

[The whole treatment here indicated is based upon one special requirement, a season of rest. This is often overlooked in many other plants besides the Cactus. There is no plant better fitted for growth in rooms than this; very few do so well there.—ED.]

THE CULTURE OF THE CARNATION.—II.

BY AN OLD COUNTRYMAN.

It only remains to give some directions for the propagation of Carnations.

Two modes are usually adopted, namely, by layering, and by cuttings, or (as they are always called in this family of plants) "pipings."

Of course Carnations can be and are propagated by seeds; but then the particular variety is not preserved, as they vary in their bloom, and so much so that from the same pod of seed, flowers will come of all the various varieties pointed out in the commencement of this paper. It is by this means that new varieties are obtained, but as flowers possessing qualities that are esteemed by florists are perhaps not one in a hundred seedlings raised, it is only those who grow them for sale or the most enthusiastic among amateurs who take the trouble to increase their collection of good flowers in that way. To save seed, the petals, as the blooms die off, should be gently withdrawn, and then the receptacle containing the seed will be perceived at their base. This must remain on the stem until it becomes hard and brown; then it may be gathered and kept until spring, when the seed may be sown in a pan of fine earth in a green-house, or under a hand-glass or a garden frame.

Cuttings or pipings may be taken off and rooted at any time of the year, except the winter, in the following simple way. Prepare the piping for planting by cutting it through *immediately* beneath the pair of leaves at the second or third joint from its top. Then cut off about half of the length of every leaf on the piping except the two bottom leaves, which are to be removed altogether. Then, having a pot containing some very light fine soil, with half its bulk of sand mixed with it, make the surface smooth and even, and insert the pipings in the centre an inch apart, and from half an inch to an inch deep, according to the size and length of the piping. Water the pot of pipings *through* with the *fine* rose of a watering-pot, and let them dry; then place a hand-glass (or a tumbler water glass will do) over the pipings. *This glass must be taken off, the inside wiped dry, and immediately replaced, every day.* If that be done, and a little water be given once in a week or ten days, pipings will readily root either in the window of a room, or in a green-house or garden frame, any time between May and October, without bottom heat. But those who have a hot-bed usually place the pots in that, which hastens the process.

The propagation by layers requires rather more dexterity in the operation itself, but is less troublesome, as it requires little or no attention after it is performed, except occasional supplies of water. The method of layering is to remove the leaves from the second or third joint from the end of the shoot, and then with a sharp pen-knife cut a slit close under and half through the joint, but without separating the shoot from the main stem. Then place some light sandy soil on the surface of the pot, and having a small wooden hook, stick, or twig,

three or four inches long, press the cut joint down into the sandy soil, and placing the small hook over it, fix it down in that position. By this means the cut joint is placed half an inch or so beneath the surface, and thus circumstanced, if the soil is kept moist by moderate sprinklings every day or two through the rose of a water-pot, roots will in six or seven weeks be produced from the cut joint; when the new plant thus formed may be removed by first dividing the stem between that and the main stem of the plant, and then passing a broad knife with care beneath the newly formed roots, and raising the new plants. While rooting the plants should remain in the open air, shaded from the sun.

Both pipings and layers, when rooted, are then to be potted in any good garden soil in pots about four inches in diameter. Three or four plants can be placed in each pot, so to remain through the winter, as stated in the beginning of this paper. Each small pot will then in the spring give enough plants to be placed in each large pot for bloom.

When it is wished to raise Carnations for exhibition, and consequently in the greatest state of perfection, as a general rule, only one flower must be allowed to remain on each plant. There are a few varieties that possess an extraordinary quantity of petals, which form an exception to this rule, as those kinds will burst their pods unless two or three are allowed to expand. But with most varieties, when intended for exhibition, all the buds but the first should be removed. Some beginners can not "find it in their hearts" to pull off so many "nice buds." Let them see a pot with four plants, and each one with a flower four inches in diameter upon it, in full perfection, and I never yet saw the man who wanted more in that pot, or was dissatisfied with the result of his care and labor.

There are modes adopted by florists for the better preserving and displaying the bloom that I have not adverted to, such as cards and wires. The cards are circular, three inches in diameter, with a hole half an inch in diameter in the centre, from which a slit is cut to the circumference to admit of passing it over the stem of the bloom. This being done, the card is drawn up upon the pod when the bloom is just expanding behind the outer row of petals. This keeps the petals from reflexing or falling back unevenly, and if the card be a light sandy or fawn color, it enhances the whiteness of the ground color of the bloom. But when cards are thus used, it is requisite to have some short brass or copper wires about five or six inches long, to secure the blooms from drooping by passing the hooked end of the wire round the bloom behind the card, and then pressing the other or pointed end of the wire into the stick, to which the stem of the plant is tied.

But these things have nothing to do with the culture of the plant in perfection, which it has been the object of the writer, an old and enthusiastic carnation grower, to point out.

[Having done this up so well, we hope an "Old Countryman" will take up

some other of his old favorites, the florist's flowers, which are yearly becoming better known and better grown.—ED.]

NO EVIL WITHOUT A COMPENSATING ADVANTAGE.

BY W. A. WOODWARD, MORTONVILLE, ORANGE COUNTY, N. Y.

THE total failure in this county of the crop of stone fruit, Cherries, Plums, Apricots, Nectarines, and Peaches, in consequence of the severe cold days of January 13th and February 8th, 1861, may possibly be compensated for in the destruction of the Curculio or Plum Weevil.

The fact that there is no stone fruit this year for this insect to lay its eggs in, and thus perpetuate its species, gives the cultivators hope that it may be exterminated, for a few years at least, and that much good may arise from an apparent evil. This insect has already laid its eggs in apples, pears, and other fruits, but without producing the same effect as upon the plum and other kindred fruits. The Apple and Pear, after being impressed with this c, grow over, and show only a slight wound, which soon disappears; while the stone fruit, after being perforated by the insect and the eggs deposited, fall; the larva then leaves the fruit and enters the ground. Although this is known as the Plum Weevil, yet it destroys the Cherry and injures the Peach, and is enabled to perpetuate its species on these when there are no plums. I have upon my place, Keewaydin, one hundred and sixty-five plum trees, and for six successive years have had no fruit except one season, when I gathered only enough for the use of my family. If the Plum Weevils are destroyed, I shall consider it a great blessing to have been deprived of other stone fruit for a single year. Let us watch the result. If my anticipations are realized, we shall have "some plums" in 1862. Advise your readers to bear with their plum trees another year before cutting them down as cumberers of the ground.

[We could wish that the law of compensations had full sway here; but we fear, notwithstanding all our wishes, that Mr. Woodward has over-estimated its present force in the instance under consideration. It is true that we have no stone fruit, in which the Curculio most readily perpetuates itself; but in the absence of these it betakes itself to others, such as the Apple, Pear, etc. Though many of the nits are thrown out in these fruits, especially in the Pear, enough are hatched to insure the destruction of the ensuing crop of stone fruit. The evil is somewhat lessened in respect to the Plum, but not eradicated. It has occurred to us, however, that the law of compensations may act in another way here, the loss of the Plum insuring a crop of Apples. The present season having demonstrated more clearly than ever, that the Curculio attacks the Apple in force when deprived of the Plum, it becomes interesting to imagine how far the destruction of the Plum insures the safety of the Apple. It seems to us certain

that nearly one half of the present small crop of apples will be lost through the attacks of the Curculio; never before have we seen this insect work on the apple in such a wholesale manner. Fruit growers should give their attention to this matter. It may hereafter be found a wise economy to plant a belt of Plum trees around our apple orchards, as a safeguard against the attacks of the Curculio.—ED.]

THE ROYAL HORTICULTURAL SOCIETY OF LONDON.

THE Royal Horticultural Society formally inaugurated the opening of its new gardens at South Kensington on Wednesday, June 5, 1861. The occasion seems to have been one of peculiar interest, and was marked by all the *éclat* that could be given to it by speeches, processions, music, the presence of the royal family, and a very grand floral exhibition. We give below Mr. Beaton's very spirited account of the Exhibition. It will not only give our readers a good idea of what is said to have been the finest exhibition ever held in London, but the managers of our own exhibitions may gather useful hints from it. The following is Mr. Beaton's account, taken from the *Cottage Gardener*:

"This will be a memorial day in the annals of gardening. From the day Mr. Sabine took up the spade at Chiswick, to the planting of that Wellingtonia on the 5th inst. by the Prince Consort, immediately after he had opened the new Garden and declared it to be the inner court of a vast quadrangle of public buildings where science and art may find space for development, the science of our craft found small space for developing the energies of the practical mind of gardeners; and practically, we had no leader for the last forty years, otherwise we might have turned out more Paxtons, McIntoshes, Flemings, and Elyea, and other heads of sections of the circle than we have done. But let us be thankful, and hope that the next forty years will make up the difference; and that the heads of the different branches of the cultivators of the science, and of the practical part of the work before us, will unite their efforts, not only within the 'vast quadrangle,' but extend them to the land's end on each side of it, and to the limits of the great circle whose products and properties we are all interested in developing.

"This commencement was on a magnificent scale, and every one, from the highest to the most humble, who contributed to the success of the opening scene, must have been well pleased at the result. All the arrangements were perfect, as far as I could see and hear. There never was such an enormous stock of plants in one place before, and of such a description. In twenty-three years after the first experiment was tried of showing plants for their own sake instead of for their flowers, two-thirds of this vast gathering were of that very description; and some of those who were the foremost to laugh at the daft experiment of 1838, were laughing in my presence in these arcades at their own good luck and

success in crowning the rival to the "floral fancy, and you never saw another set of people more in harmony and more pleased with each other than we were.

"The most extraordinary circumstance, however, connected with this step in the progress of our experiments, was a large collection of most welcome plants that were sent from Japan by Mr. Fortune expressly for this Exhibition. These Japan plants arrived in England on the Friday before the exhibition day, and were in a fit and proper state for the exhibition tables—in short, as good specimens of cultivation as ever I remember to have seen exhibited by English gardeners in these very rare or very new plants. Indeed, I could name some plants at the Exhibition which came from within a short distance from the Garden, that were not so creditable to the growers as those sent over by Mr. Fortune were to the gardeners of Japan. These Japanese seem to have the very same style of taste in plants as ourselves, and also to have as good gardeners and as careful propagators as we could turn out. Mr. Standish, of Bagshot, exhibited these plants, and, of course, he will set to and propagate and sell them as fast as possible.

"*Cyanophyllum magnificum* and *Dion edule* were the two most splendid plants there. One plant of *Acrophyllum venosum* was the greatest triumph of gardening there in growing specimen plants; it was in a first-prize collection of nine plants by Mr. Chilman. The best single specimen there, or any where else in Europe, I should think, was Mr. Warner's *Lælia purpurea* with thirty-six full-blown flowers on it. It was only the week previous that I was boasting of one at the Crystal Palace from Mr. Stone, which had eleven blooms on; and even at this grand Exhibition, two of the best *Lælia purpureas* had each only eight flowers. The greatest success over the greatest difficulty in growing very rare plants, was Mr. Leach's exhibition of the *Disa grandiflora*, growing exactly like a luxuriant native along the edge of some ditch where there were no commissioners for looking after the drainage and sewerage.

"In my own favorite family of Ferns, *Gleichenia* is now the most favored at the Exhibition, and I think every species of it was there; and every one who showed Ferns had more or less of the different *Gleichenias*.

"The Fruit was most tempting, and the only part at the Exhibition that was not well arranged for. The fruit stand was an oversight—it was a double stand with one side, or one-half in the shade, and facing the back wall of the arcade; of course, one-half of the fruit could not be seen well. The Pines were as good as usual. The White Grapes not quite ripe enough for a high-class dessert; the Black Grapes were never better seen in this globe. The Buckland Sweetwater, for which I risked my liberty three years back at the Crystal Palace, was by far the best White Grape there, and will be the gardeners' best friend in White, as the Hamburg has always been in Black. Ingram's Hardy Prolific Black Muscat is decidedly of the Black Prince section, and the very best of Grapes; and the Trentham Black is of the Hamburg race, and wore the best bloom of all

the Black Grapes there. But I must put off the best part of the fruit tale till I have more time and room, adding only this remark on the grand new idea of giving prizes for dessert arrangement—that it turned out exactly as some of my patrons, from whom I learn all about the fashions, colors, taste, fancy, and forget-me-nots, predicted to me months back; and I would be bound that nine out of every ten gardeners who saw these desserts in competition, did not understand even the meaning of the first-prize dessert. Why should we not have the three degrees of comparison in the dessert? And, surely, people would need to know for whom the dessert was intended before they could make a proper use of the dishes, fruit baskets, and their own brains. Nothing, at least, would puzzle me so much as to be told to dish up eighteen or twenty dishes of fruit for a party, without having some idea of whom the party consisted.

"I began at the western arcades, and took the measure of the show in yard steps as nearly as possible. The plant stages were in three broad steps, covered with green baize, and set up against the white of the back wall of the arcade, which was most telling to Ferns and all the fancy and fine-leaved plants; but the white of the back wall took off much of the glow of Pelargoniums and Rhododendrons; indeed, more so, as all the light is from behind the head of the visitor. Cover that part of the back wall with green baize, and you spoil it much more. Too much of one shade of green *for a ground color* to green leaves of all degrees of green, will not stand the test of good effect out of best flowers. Dark brown or dark oak color I am told to a certainty is the best to put behind flowering plants when the pots stand on green cloth, or dark grey if the pots are on brown boards or mother earth. In front of the plant stage a space of twelve feet wide in gravel, makes up the rest under the cover of the arcade.

"The first twenty-four yards were of huge Ferns; then two rows of Rhododendrons, and seventeen yards of Heaths; then six yards of fine-leaved plants, and sixty-nine bouncing steps of Pelargoniums, which brought us on to the west end of the conservatory. Along the west end, the front, and across the east end of the conservatory, is a narrow shelf holding one row of large plants, or two rows of middlings, and three rows of comfortable plants, not small, nor large, nor middling. One hundred and fifteen yards of that stage were devoted to plants, the rest to doorways and other ways. The whole of these one hundred and fifteen yards might be said to be filled with new plants, rare plants, or fancy novelties of some degree. Here the Messrs. Veitch exhibited some of their rarest gems, and they were many and most abundant. Mr. Standish stood across the east end with that collection of Japan rarities just mentioned, consisting of from forty to fifty specimens. Then the two firms of Hendersons, the Pine Apple and the Wellington heroes, with all the fancy of their respective firms. Then Mr. Turner and Mr. Ivery with new Azaleas. Then Milne, Arnott & Co., with their new Gloxinias, and three new rivals in the Messrs. Bull, Linden, and Verschaffelt; and, last of all, and biggest of all the rest, Mr. Warner's

'Good Gracious' *Laelia purpurea*, and another which he calls after Mr. Day, who first bloomed it, *Laelia purpurea Dayii*. But I shall have them all in detail before I end.

"Along the back of the conservatory stood a large portion of the vast assemblage of variegated Begonias, the whole of the Orchids, and of the specimen and collection of Roses, the new ones being on the front stage, and all these took up seventy yards of very wide stages, in three easy steps. Within the walk or front passage of the conservatory was a double stand for all the collections of stove and greenhouse plants, and for Azaleas, some Begonias, and for two large collections of Ferns—that of Mr. Williams, of the Paradise Nursery, being the best ever exhibited. He ought to write a book on them, as the one he wrote on Orchids, if only to tell how to pack and unpack for exhibition. Of these double stages there were thirty-five yards, leaving a gravelled space eighteen feet or twenty feet wide between them and the back stage along the very back. In the very centre was a large circular stand cutting the scene in two—a wrong principle. Right and left of that circle—the last circumference of protection for Roses—stood a single file of all sorts and degrees of Wardian Cases, and miniature drawing-room greenhouses, stoves, and ferneries. Then out of the house, and into the east arcade, where the fruit was, Mr. Noble's, of Bagshot, beautiful Rhododendrons; then eighty-nine yards of the largest and finest variegated and fine-leaved plants in the world, under pot and tub culture, the like was never before seen; twelve yards British Ferns, six yards tall Cacti, six ditto Melocacti, and other dwarfs of the prickly races, four yards or five yards of Calceolarias, six yards of seedling Pelargoniums, and others on a double stage, two yards Amaryllids, four yards with Mr. Williams' hardy variegated plants, and six yards of Mr. Salter's ditto, twelve yards of cut Roses from Mr. William Paul and Messrs. Lane & Son, and many seedling novelties, among which a dwarf dark purple Nasturtium-looking *Tropaeolum*, in the style of the Tom Thumbs, promised to be a first-rate and the first good bedder of that race. Mr. Smith had his new bedding *Calceolaria canariensis* there as the best of that brood. The single striped and double Petunias were very beautiful; one single light with red stripes, from Mr. Ferguson, of Stowe, was most striking, as were the pot Pansies from Messrs. Downie & Laird, and from Mr. Bragg. Mr. Dean, of Shipley, Bradford, had two boards of his Belgian Pansies, in cut blooms, very fine, and among them his large, light Princess Alice, to which we gave a handsome lift at the Floral Committee the week before.

"The Fruit double stand was eighteen yards long. The bunches of the Buckland Sweetwater weighed six pounds four ounces, and three of the Black Prince eight pounds four ounces, all from Mr. Hill, of Keele Hall. Thirty-one or two Pine Apples, twenty pots of Grapes, and two pairs of pot Grapes trained archways on the back wall, with twenty-nine bunches of Black Grapes from Mr. Saunders, gardener to Sir H. Meux, were set off that way better than any I ever

saw exhibited. Her young Grace of Sutherland kept up the old charter in competing with Her Majesty with a full collection of eight dishes of splendid fruit. Mr. Henderson came out again in the old Fleming style; and Mr. Ingram was worthy of his name, and to give Her Majesty the first place. He had Black Hamburg and Muscat Grapes, Smooth Cayenne Pine—a fine fruit, Peaches and Nectarines, British Queen and Prince Arthur Strawberries, May Duke Cherries, and Beechwood Melon. Mr. Henderson mounted Black Hamburg and Black Trentham Grapes (the bloom on the latter inimitable,) Smooth Cayenne Pine, Peaches, Nectarines, Black Circassian Cherries, and two dishes of Melons—the Trentham Hybrid White Flesh and the Trentham Hybrid Green Flesh, both of exquisite flavor; but I was round before the Judges, and did not see the prizes of any of the fruit.

"But I must give you some idea of the new plants from Japan, and all along the front stage; for about collections, if you read over again the reports of the May shows for the last seven years, and suppose you are reading of this Show, you will not be two plants behind the time you are reading. To begin at the beginning I must take the northeast corner of the house, and there were six huge pot-baskets with *Acetochili* under great glasses from Messrs. Veitch, and by the side of them three small plants of the purple Maple of Japan, *Acer japonica*; and from a large specimen of it from the Pine Apple Place Nursery, one could accept it as a rival to our purple Beech. Then three *Libocedrus tetragona*—the true source of the Alerse wood, of which you heard so much from the Spanish contribution to the first Crystal Palace in 1851. It is as upright as a dart, and of a lively green, and seemingly a very fast grower. Three plants of a new Silver Fir from Vancouver's Island; a very curious little *Thuja*; and three of a most curious *Cryptomeria japonica*—more like a *Retinospora* than a *Cryptomeria*, and an evergreen, a bedding plant with little green about it, but the most beautifully variegated plant, as like the variegated Periwinkle as you can draw it, and all the time a new *Euonymus*. Get a stock of this shrub, and all you will have to do to edge the ribbon after the planting is finished is to put in a row of cuttings of this very thing; every one of them will root so, and while they are doing that and for the rest of the season you have the very best variegated edging I can think of. The same plants will do half a dozen years, as the kind seems quite a dwarf. This, and Mr. Bull's *Agathaea* or variegated *Cineraria amelloides*, and Mr. Salter's *Veronica chamaedrys variegata* are three gems, take my word for it. How most strange it seems to call the dear old *Cineraria amelloides*, now termed variegated, by its true name, while the wrong old name would alone sell a thousand of it ere people can call to memory the new name—*Agathaea*, and then not know if it is the fashionable pronunciation! How often have I asserted that it is the best of all plants to keep in pots in readiness to fill up in a hurry, as all the soil can be shaken from the roots in the hottest day in July or August, and one watering after planting it so is sufficient to keep it unflagging.

"After these stood the forty or fifty plants arrived from Japan on the previous Friday. What a fortunate man Mr. Fortune has been, that he can send from the ends of the earth plants fit for the present exhibition. The Parasol Pine took my eye first—that is *Sciadopitys verticillata*; a fine variegated *Gordonia* sp., a variegated *Eurya* sp., a variegated *Osmanthus angustifolius*, like a genteel form of a silvery holly. The dwarf variegated Bamboo in bunches, a new evergreen *Berberis*, several kinds of variegated *Camellias*, a variegated Tea plant, *Thea viridis*, two or three kinds of variegated *Podocarpus*, a variegated *Daphne*, ditto *Eleagnus*, a green and a variegated *Retinospora* something, variegated *Ilicium*, golden *Podocarpus*, *Thujopsis dolabrata variegata*—the finest variegated plant of the creation—nothing on earth can beat this for gemiferous looks; *Aucuba japonica* scemina to cross and get seeds from at last, and a beautiful mate for the '*Magnolia spottifolia*' of Mr. Walter Dickson, and ever so many more of the same selections of garden gems which the Japanese value as much as we do our variegated Geraniums and other soft-wooded plants.

"Next to these stood three more plants from the Messrs. Jackson, of Kingston—a fine-looking *Quercus bambusæfolia*, a long soft-leaved *Buxus* from Nepal, and *Juniperus drupacea*, a strong upright grower. Then some extraordinary queer thing growing in jointed flaps against a deal board, from Mr. Williams, of the Paradise Nursery, said to be from Manilla.

"Then a collection of thirty-two kinds of most rare and ornamental plants from the Messrs. Veitch, consisting of *Selaginella atro-viridis* and *Lobbii*, also *conferta* and *caulescens*—as much like fine Ferns as Lycopods; *Lycopodium phlegmara*—a tree Lycopod, *Lomaria falcata*—a miniature tree Fern, exquisite and *Leptopteris superba*—a filmy Fern under a glass cap; *Sonerilas*, *Medullarium*, *Physurus*, *Sarracenas* of many sorts, *Campylobotrys*, *Gardenia radicans variegata*—a Japanese of course, *Ouvirandra*, the water-lace leaf of Madagascar, the Australian Pitcher-plant, *Cephalotus follicularis*, which stood out several winters in Cornwall with the late Sir William Molesworth, a Venus' fly-trap *Dionaea*—fine-looking and fine to the touch, *Maranta ornata*, with long upright footstalks to the handsome leaves, *Caladium Veitchi*, of the shine of *Alocasia*, and the *Adelaster albivenis* lately before the Floral Committee.

"After these another collection from the same exotic growers—say *Selaginella Wallichii*, a mimosa-leaf-like plant, a love of a thing; *Caladiums*, Pitcher-plants, a fine *Pteris argyræa*, and *cretica albo-lineata*: *Caladium Bellemeyi* done to a T, also the *argyrates*; *Colocasia edulis variegata*, a splendid thing; and the *Alocasia metallica* with eight leaves, colored as it is in 'The Illustrated Bouquet,' and not of that dark brown dusty out-of-the-world looks you sometimes meet with where the plant is starved with cold and wet.

"Mr. Jackson followed up from Kingston with *Lonchitis aurita*, fine; *Alocasia antiquorum*, variegated and very fine; *Asplenium filix-scemina*, a most delicate frizzly Fern; and a good *Pteris cretica albo-lineata*—the variegated

Fern, which I am just going to compete with my variegated Nosegay out of doors.

" Mr. Bull next, with a prickly-leaved Hippomane, like some Brexia, of which a huge plant was in a distant collection ; Campylobotrys of sorts ; Theophrastas ditto ; a large Lomaria heteromorpha ; Araucaria Cunninghamii, new to me, and seems a robust thing ; young Palms of sorts and other sorts of that run ; and six plants of Arthrotaxus Donnii ; and a fine lot of Agathaea coelestis, or the variegated Cineraria amelloides, getting better and better as the season goes on. Mr. Bull ought to make a fortune out of that one plant—the most useful plant and the easiest to grow and to keep you can think of.

" Then a fine lot of upright Gloxinias from the Messrs. Smith, of Dulwich, and from Messrs. Milne, Arnott & Co. ; then a stumpy tree Fern, Todea pellucida, from Mr. Standish ; then a large collection from Mr. Henderson, of Pine Apple Place Nursery, including the aforesaid large plant of Purple Maple, Acer japonica, a beautiful variegated Yucca filamentosa, and the bright silvery-leaved Acer negundo, and a variegated Cobaea scandens. Then assortments of the newest Roses, of which Evêque de Nîmes was very choice, and the next two, Madame Bonnaire (H. P.) and Triomphe de Lyon (H. P.)

" The collection from the Wellington Road Nursery succeeded ; and here were the very fancy Petunias, double and single, plain and spotted, edged and striped, and of the liveliest shades of color. What really nice things there are now in this one family ! . The very elegant basket plant, Convolvulus mauritanicus, with the light blue of the finest campanula, a love of a plant, just a lady's gem of a thing ; Caladiums in all their spots ; Begonias, ditto ; Chamaecyparis sphæroidea a new fine Conifer ; Blandfordia nobilis, in good bloom ; the Bellemeysi Caladium particularly good ; Lady Emily Peel, the best of the Shrubland Rose breed of Petunias ; Sphærostema marmorata, a fine climber ; Amaryllids and several others of the improved seedlings of garden plants ; then a huge plant of Orchis foliosa, with sixteen flower-spikes, from Mr. Williams aforesaid ; and a large Dendrobium nobile, from Mr. Hedge, Norwich Road, Ipswich, as you go out to Shrubland Park. Then the grand monarch of all this grandeur — the grand Lælia purpurea with thirty-six blooms on it, from Mr. Warner, who is one of our Committee, and was as deep in the procession as W is low in the alphabet, for we all went in for it, dictionary fashion. By it was the variety called after Mr. Day, who first bloomed it, and also a fine variety of Cattleya, which he calls after Mr. Fairrie, of Liverpool, for his blooming the kind for the first time. But at this point every body I ever knew seemed to meet and wished to have a chat, so I may be wrong in Days and Fairries ; but I threw away my book and ran out of the house, and I must find it before I go further."

MOSS BASKETS AGAIN.

BY WILLIAM CARMIENCKE.

THE smoke which surrounded the "Close Observer" while he wrote the former article has gradually disappeared, and he finds himself placed between two fires. In the distance he discerns the "Second Barnum," advancing from the northeast, ready to give him a broadside from his guns, thinking to silence Paul Pry at once; he is joined by Dr. Norris, of Delaware, who attacks me in the rear; however, I think the Doctor, after a satisfactory explanation from my side, will draw back from the battle, and leave the "Second Barnum" and the Horticultural St. Thomas to settle the question, while he remains neutral.

From the statement which the "Second Barnum" makes in the February number of the HORTICULTURIST, I find it a necessity to take up the pen again, not only to justify myself before the public, but also before Doctor Norris and the Editor of the HORTICULTURIST, as the last-named gentleman says: Let us have light! If the "Second Barnum" had known beforehand who the "Close Observer" was, I think he would have made a very different explanation. I would have given my name if it had been called for, but as the Second Barnum learned it from one of his neighbors, I was saved the trouble of doing so; still I wish to show the public that I am not afraid of giving my name, and they will find it at the head of this article. Of course the "Second Barnum" would like to know the reason why I exposed him. Dr. Norris thinks jealousy is the cause of it; I am glad to say that such is not the case.

Some men show a great desire to get their names known, and we sometimes find that when they attempt to do so, they rush forward, looking neither to the right nor left, until they stand upon the brim of an abyss, which threatens to engulf them, and why? It is an old saying: Look before you leap. This rule bids us not to enter upon any enterprise before we have taken into consideration, and know the probability of gaining the point towards which we direct our course. The only source by which we are able to arrive at the truth, is by a careful meditation upon the subject which occupies our thoughts, and through experiments made with judgment. The "Second Barnum" should have taken this course before he made his new invention publicly known; it remains at present an hypothesis to him whether he is able to bring grapes to maturity in his Patent Moss Baskets—that is, a basket filled with moss, in which is a cup, containing sand, charcoal, and water, but no soil, which Dr. Norris would have found to be the case if he had examined the baskets. I know, however, the Doctor's stay was very short, as I was present at the time; and he did not examine the baskets very closely. Both my antagonists say that all the *trees in pots are grown in soil*; if they would read my article through with some attention, they would see that I did not mention any thing about trees in pots; I exclusively referred to the

Patent Moss Baskets. The trees in pots are all grown in soil, and I must confirm Dr. Norris's statement, that the moss was placed there as a mulching.

The question which must be answered is this: Was it a deception? The "Second Barnum" in his statement neither maintains nor contradicts my article; it seems he wishes to say that all his trees are grown in soil. Can he deny that the vine in *this basket* was planted in any thing but moss? that it contained a cup filled with water, sand, and charcoal, and that this is his patent?

He says: "What was done once can be done again." I do not doubt that where bunches of grapes were tied on once they may be tied on again. Both myself and other gardeners know for certain that there were no vines in the houses able to bear fruit last year, and as I had charge of the houses, and watered all the plants and trees, the baskets included, it is a mystery to me how ripe grapes could grow on this basket in *two hours*. I hope the "Second Barnum" will make a more satisfactory statement. Yet, when the basket is brought to the exhibition, with the ripe grapes on, grown naturally, and the judges have made a thorough examination of the Patent Moss Basket, I feel willing to give the "Second Barnum" \$10 premium for the first bunch of grapes produced this way, equal in size and flavor to any taken from a pot vine, grown in soil. If this can not be done, where is the benefit of growing them in those baskets?

My reason for writing the last article, "A Second Barnum," was to defend gardening. It is generally considered an honest trade, and I think all *humbug* should be kept without its boundaries. Suppose this should be allowed to go unnoticed, what would be the consequences? If, for instance, some gentleman, some Mr. X., had seen this basket with the fruit on, and returned home, after being told that the grapes were grown on the vine. Having a green-house of his own, and keeping a gardener, he buys a basket, and receives directions from the "Second Barnum" how to grow the vine in it—after a fruitless attempt, the gardener sees it can not be done, *because he does not like to do what can be done again*. Still, Mr. X. insists that he saw the grapes grown in this way, and he will consider his own gardener very unskilful. This would not only tend to injure practical gardeners; it would at the same time be a cultivation contrary to the laws of vegetation. Persons having only a superficial knowledge of vegetable life, must at one glance see that such cultivation has no foundation; while to those not familiar with the cultivation of plants it would prove a deception. Is it possible that those grapes were grown in that basket? is a question directed to me not once, but many times. I think that I showed in my former article what it was.

The "Second Barnum" says, my strictures are an insult to hundreds of people who have seen what I say can not be done. I am, however, able to bring forward witnesses to confirm my statement about the basket. Dr. Norris thinks that I would question his veracity. I feel sorry that the Doctor should look upon those remarks about his article in this light; it was far from my thoughts to intimate any thing like this. I know certainly that Dr. Norris would not practice a

deception ; he was not there at the time the grapes were on the basket, and could not allude to them. The trees in the small baskets—not the patent basket—were all planted in *moss*, no soil and without any cup filled with charcoal, etc. ; with the exception of *one tree*, namely, the pear I spoke about, which had been grown in a pot beforehand, from which it was replanted in the basket without disturbing the ball of earth. This accounts for the pear coming to maturity.

The Doctor says my sneers about the turtles and frogs are unnoticed, because others saw them. In regard to the first named, the turtle, there being only *one*, I must say that it came in through the front lights, and I placed it between the pear pots myself. The frogs came in the houses the same way, but neither of them was placed there to devour numerous insects, the last named not being plentiful enough to satisfy their hunger.

I hope these explanations will prove satisfactory to the Doctor, and that he will not rank me among those who are jealous.

[In justice to Mr. Carmiencke, we must say that his article has been on hand some time. We desired, before printing it, to see these Moss Baskets, in order that we might be able to give this discussion a right direction. We have at last seen one of them, and find it quite a different thing from what we supposed. The basket, as well as some fruit trees in pots, was in New York, on its way to Washington as a present to Mrs. Lincoln. We should have been glad if Mr. Chamberlin had been present, that our examination might have been more minute. The wire basket was nearly three feet in diameter, and had a grape vine growing in it. The moss on the outside was in its natural condition ; the filling in was broken up, and resembled somewhat vegetable mould ; this, under the operation of heat and moisture, slowly decays, and, with the carbon and ammonia from the charcoal and water, furnishes food to the roots of the vine ; but, of course, the process of nutrition, under such circumstances, goes on imperfectly. The vine was neatly trained around the basket ; the growth was not very strong, and the bunches of fruit were not very large, but the whole thing was there. It can not, therefore, be doubted that grapes can be grown and ripened in a basket of moss prepared in this way, but we are inclined to the belief, that in size, flavor, and productiveness they will be found inferior to those grown in a good soil. They are curious and ornamental, but, of course, will not be adopted where profit forms an item of grape culture. As ornaments for the conservatory and dinner table they are very pretty. We believe Mr. Chamberlin claims no more for them. The process, instead of being what we supposed, is very much the same as that practiced for many years by Mr. McNab, a very intelligent gardener of Scotland, and superintendent of the garden of the Caledonian Horticultural Society.

The following extract from an English publication will justify Mr. Chamberlin in his position, as well as show what has been done for a dozen years or more in

growing plants in moss: "Various experiments in growing stove and greenhouse plants entirely without soil about their roots, have been carried on for some years in the garden of the Caledonian Horticultural Society, by Mr. J. McNab, the superintendent. In those experiments, the plan generally adopted has been to shake all the soil from among the roots, which are enveloped in moss, and the plants are then suspended from the roof of the house, the moss—and consequently the roots—being preserved in a moist state by means of worsted siphons connected with vials, or vessels of water suspended near the plants. Success has generally attended these experiments, the plants growing well, and also producing their blossoms. Some of these plants were produced at a meeting of the Society held in March, 1848, and among them were two plants of Camellias, in bloom, which had been subjected to the above treatment since July, 1847. There was also a very fine specimen of the *Strelitzia reginae*, which had been grown on this plan for the last three years, and had never failed, under this mode of treatment, to produce its gorgeous flowers twice in the course of each year, in spring and in autumn, during the months of February and March, and also during August and September. In the ordinary mode of culture it is not easy to induce this plant to produce its blossoms, even once in every year."

This, we think, settles the fact that plants may in this way be grown in moss, though it is no doubt more ornamental than useful. Cuttings are known to root readily and freely in powdered moss, and so they will in charcoal dust; but we do not believe that any substitute for a good soil has yet been found for growing and fruiting plants in. This whole matter may be briefly summed up thus: the one party is entitled to all he claims for the process on the score of ornament, while to the other may be conceded the point of utility.—ED.]

A DAY'S RIDE.

BY THE EDITOR.

HAVING some business up the river, and feeling the need of recreation, we planned with Mr. Downing a day's ride, and give the reader the result, in order that he may know how many beautiful things can be seen in so brief a time. It would be desirable, of course, to take more time, and we would hardly advise an enthusiast to undertake it, unless he has the ability to take in and digest whole acres of beautiful objects at a single glance. The great drawback is, an almost irresistible desire to linger by the way, and indulge the sense of enjoyment. All the places visited were large, embracing from two hundred to seven hundred acres, and stopping to examine individual objects of interest was quite impossible.

We left New York in the *Tom Powell* on Thursday afternoon, August 1st, and remained in Newburgh over night with Mr. Downing. The sail from the city to Newburgh is full of interest, bringing in review many fine country seats

perched on the hillsides, besides some of the grandest scenery on the Hudson. Newburgh Bay, inclosed as it were in the arms of the majestic Highlands, is unsurpassed for beauty, and one never tires of admiring it. But this *en passant*, for our journey proper began on Friday morning, when, with Mr. Downing and Mr. Woodward, we crossed to Fishkill to take the early express train, and were disappointed in not finding on board some friends from New York. We proceeded on our way to Tivoli, our first stopping place. The day was intensely hot, the heat of the cars being almost insufferable. Our only refreshment was an occasional glimpse at the river, the grand hills, and now and then a pretty village seated under their brows. Tivoli is nearly opposite the Catskill Mountains, and near their summit could be seen the Mountain House, the distance diminishing its size to that of a little cot. On a high table land between the Catskills and the Hudson is the village of Saugerties, with its church spires shooting up against the dark back ground of the mountains. From its position, we thought it one of the most beautiful villages we had ever seen.

From Tivoli, we went four miles to Annandale, the country seat of Mr. Bard, consisting of some 210 acres. The entrance is through a grand avenue of old Pines. We pass on the left a fine water tower, which supplies the whole place. Mr. Alcott, whom we found very attentive and polite, presides here. The place is in a state of improvement. Fronting the road, Mr. Bard has built another church, the first having been destroyed; but the steeple has not been elevated yet; for we saw it in a lot about two hundred yards off, with the bell in it, where for the present it performs its duty of calling the villagers to church: more lowly in its notions than many belles we could name. The dwelling is also being altered and repaired. A boundary drive of considerable length is being laid out, and will embrace in its course most of the fine points of the place. The fruit and vegetable garden is new, and well stocked. The Pears are partly grown as espaliers, and were making a good growth, but needed a little pinching. The Tomatoes were grown on a trellis, a plan that we like much. Melons were abundant and ripe: we found them very good and refreshing. The graperies are well kept, and the fruit such as to do Mr. Alcott great credit; the Hamburgs and Muscats were beautifully ripened, and in all respects first rate. From the graperies we passed to the lawn. This has recently been enlarged and partly regraded. It is in good condition, has a fine face, is kept nicely cut, and has many fine trees on it. There are several fine vistas here, embracing views of great beauty, taking in the Catskills and surrounding mountains, long stretches of river, a pretty little island, and groups of wood. Fleecy clouds were floating through the air, and their shadows passed over the mountains like phantoms of another world. The scene was impressive, and we left it with regret; but we had no time to linger, and pursued our way over the knolls and through the woods to the water-fall and dell from which the place takes its name. On the way we passed a "happy family," composed of sheep, chickens, and a goose.

Then we came to a pretty waterfall and a little lake of irregular outline, surrounded chiefly with evergreens, the deciduous trees having been mostly cut out. Passing down a narrow, well-wooded foot path, with occasional glimpses of water, we at last reached the foot of the dell, and came in full sight of the cascades, the water leaping joyously over and around the rocks, all foaming with gladness, and each drop seeming a little elfin sprite. If not grand, the scene was very beautiful. The little river is here crossed by a pretty rustic bridge, with a pavilion in the middle, commanding a fine view of the cascades and a reach of the Hudson in the opposite direction. The place was cool and refreshing; tired and sweltering with the heat, we all sat down for a moment's rest and enjoyment. We love water, especially water in motion, with an inexpressible fondness; and as we passed on, we paused for a moment at the end of the bridge to take a last look at the cascades, and then went on our way repeating Tennyson's noble line,

"A thing of beauty is a joy forever."

Toiling up the hill, we found ourselves, almost without knowing it, on Montgomery Place, the residence of Mrs. Barton. This has been so often described, that it seems almost unnecessary to say a word about it. Its fame is known every where. It is, no doubt, one of the most finished places in the country. It has age; the trees and shrubs have developed all their grand proportions, and impress one with a feeling of reverence. The grouping is well done, and worthy of study. There are many individual specimens of great beauty and interest. The lawn is extensive and well kept. The views are possessed of much grandeur, but might be improved, were it not almost a sacrilege to fell such noble trees. The walks and drives are well made and admirably kept. The Pinetum, though not as large as we could wish, is a very interesting feature. At the conservatory we found Alexander, and *locum tenens* of the place. Alexander was born and brought up here. He is very polite and attentive, and takes a good deal of pride, as well he may, in pointing out the objects of interest. The conservatory is a ridge and furrow house of large dimensions, and was filled with Fuchsias, Gloxinias, Achimenes, Hanging Baskets, and variegated leafed plants in great variety. All were well grown, and the house was gay with flowers. The flower garden is a fine piece of work, but the arrangement of the bedding plants was faulty. The plants themselves, however, were mostly in good condition, and the whole garden clean and tidy. Perhaps the finest trees on Montgomery Place are the Elms; but we must not particularize; we have no time for that now. A person should hardly visit Montgomery Place unless he can spend a day there, and repeat his visit often: a mere glance at so many grand things only serves to bewilder one. But this was all we could do, and so we passed along to "Messina," the home of Mr. Aspinwall.

Messina seems like a comparatively new place, the improvements being still under way. The fruit and vegetable garden occupies a large space. Pipes are

being laid through the principal walks to supply the garden with water. The drains and walks will be costly affairs. The natural growth on the place has been well used, and some considerable planting done around the dwelling, on the northwest corner of which stands a large and stately Pine, remarkable for its age. The lawn is hardly yet finished. The views from it are very fine, resembling somewhat those at Montgomery Place. Mr. Kimber, the gardener, called our attention to a Pine thirty-five feet high and fifteen inches in diameter, which he transplanted last winter with a ball of earth. The removal has been entirely successful. A row of fig trees were in fine condition, and well laden with fruit. There is but one small grapeviny, but no doubt there will be more; there should also, on a place like this, be at least one good forcing house. But all these things are the work of time. There was more to be seen, but time was pressing, and Mr. Downing, and, in fact, all of us, were suffering from fatigue and the overpowering heat, and were fain to seek the shelter of the house for a little rest. Being refreshed, we again took to our carriage, which we had sent around by the road from "Annandale," while we pursued our sight-seeing on foot. Up to this point Mr. Alcutt had with much kindness accompanied us, and saved us many steps.

Our next point was Rhinebeck, distant seven miles. With a good road, the grand mountains, and occasional glimpses of the river, the ride was a very pleasant one. We noticed by the way that many of the farmers were still making hay. Our destination at Rhinebeck was "Ellerslie," the princely residence of the Hon. William Kelly. We were welcomed at the door by Mr. Kelly himself, who was fortunately at home; and very soon we had the pleasure of taking by the hand again the kind hostess herself, and then—we might as well tell it—an introduction to what Mr. Kelly called a "whole bevy of girls." We felt like sitting down to enjoy the thing, but the carriage was at the door, and so we started for a ride around the place. On going down the drive to the road we had an opportunity of examining a very happy example of thinning out a natural wood. The subject had been carefully studied, and executed in a skillful manner. We first stopped to look at the cattle. Mr. Kelly has a splendid herd of Short Horns, and among them some of the best animals in the country. Hiawatha is a noble bull, and there are others in the herd not less so. The cattle barn is very spacious, and a model in its arrangements; every thing is tidy and well kept. Last year we took a fancy for a heifer; she was a gentle beast, good tempered, and almost familiar. This year we took a fancy for a young bull; but he was an ugly wretch, not in the least disposed to be friendly; in fact, to keep clear of his heels we had to take to our own.

After examining the stables and admiring the cattle, we continued our ride following the boundaries of the estate, (some seven hundred acres,) noting the beautiful changes in the landscape as we passed, and finally entered the grounds again at the rear entrance. Here we have a long straight drive till we enter the

pleasure grounds again. This drive is lined on each side with trees, and the scenery passed is varied and beautiful. Here we have a wide expanse of well-kept meadows, with no fences to obstruct the view; there a fine clump of trees; next some specimen tree; again, a well-wooded knoll; then a beautiful pond with its little pleasure boat; and after this the woods grow more massive, and the road begins to wind as we approach the house. Much as we enjoyed the drive along this road, we have some fault to find with it; indeed, it is almost the only faulty thing about the place. It is only the back entrance to the place, but still it is much too fine a drive not to have its capabilities fully developed. Let us go back to the gate again. From this point for a long distance, the ground is level and the road straight; this is right enough; but here begins a succession of knolls, and the road goes straight up and down over them, and to this we object, on the score both of pleasure and beauty. It is trying to the horses, and produces an unpleasant sensation in the rider. It seems to us that an opportunity has been lost here of making a series of the most beautiful curves, enhancing the interest of the scene, and prolonging the pleasure of the drive. With this single criticism, let us continue our ride. As we approach the house the trees and shrubbery become more imposing, and the grounds highly finished, being a fitting introduction to so hospitable an abode.

Leaving the carriage at the door, let us, in the brief space that remains, take a ramble through the grounds surrounding the dwelling. Almost the first thing we see, on a knoll at the end of an avenue fronting the house, is a beautiful Grecian temple, the approach to which is lined on each side with beds of brilliant flowers. The effect is exceedingly pretty. The next thing that arrests the attention is the splendid lawn, very much improved since our last visit, and even in this dry time as green as an emerald; kept constantly clipped and rolled, it seems to the tread like a piece of soft velvet. On that eminence in front of us is the large and beautiful conservatory. Here, at the head of the steps, we have a noble pair of Golden Arbor Vitæ, and the Washingtonia or Wellingtonia six feet high; here is a beautiful round-headed Laurustinus, and stately Yews, and slender Junipers, and many other fine things which we have no time to examine. But stop a moment, and look around at all these grand masses of trees, and the splendid Spruces, and Firs, and Pines, and Elms, and other evergreen and deciduous trees, singly and in groups. Let us now pass through the conservatory. Here we have Fuchsias, and Gloxinias, and Achimenes, and Ixoras, and Jasmynes, and Begonias, and Caladiums, and many other beautiful and rare things. Here are three more houses, but we can only look in at the door. In this we have Nepenthes, and Begonias, Caladiums, Marantas, and other variegated leafed plants. In the next we have a collection of Orchids which would gladden the heart of our friend, Mayor Van Voorst. In the last, more Orchids, variegated leafed plants, and other choice things. A few steps further, and we have the flower garden proper, with its ribbon borders and beds cut in the lawn, and very skill-

fully treated. All these things, under the skillful management of Mr. Bennett, are admirably kept.

Let us now hasten to the house, take a seat on the piazza, and study the landscape. This is no doubt the time and the place to take one's last impressions of Ellerslie. The sun is just passing behind the western hills, and the trees cast their dark and lengthened shadows on the lawn. There is no fence or boundary line to obstruct the view. On the right and in front of us the mountains tower up and away, till in the far distance they seem like huge masses of blue mist. The river beneath us, inclosed by the hills, seems like a large and beautiful lake, its sheeny bosom here and there studded with a passing sail. On the left the hills gradually pass away into table-land, which becomes lost in the distance. In the middle ground there is a wide expanse of beautiful rolling lawn, dotted here and there with well-disposed masses of trees, with an occasional group of small dimensions, and here and there individual specimens unshorn of their glory ; and as if to make the picture complete, the "lowing kine" are still grazing in the fields. It seems to us that we have here all the elements which go to make a perfect picture ; nothing seems to be wanting.

Looking at the setting sun and the beautiful landscape, the spirit of repose which was settling over the whole scene seemed to take possession of us, and once again as of old we felt like yielding to its inspiration ; but a gentle hand tapped us on the shoulder, and tea was announced. We had forgotten how rapidly the time had fled, and the journey still before us. After tea, and some fine music by the ladies, we bade adieu to our kind friends, and took the 8 o'clock train, Mr. Downing for Newburgh, and Mr. Woodward and ourself for Poughkeepsie, where we had planned another day's ride.

And thus ended our day's sight-seeing. We had worked hard, but had seen a great deal, and were richly repaid, our only regret being that we could not linger longer and see more. Our next "ride" will take us from Poughkeepsie down to Fishkill and Newburgh.

A PLATE OF STRAWBERRIES.

(See *Frontispiece*.)

We present as a frontispiece this month a plate of Strawberries, old and rather late. Of most of those figured little need be said ; some have already found their place among the rejected. Prince's Imperial Scarlet is a good sized, obtuse, cone-shaped berry, firm fleshed, juicy, and pleasant flavored. Jessie Read is of good size, cone-shaped, rather soft, medium flavor. Ladies' Pine is of medium size, conical, sweet, and very high flavored ; a good variety for the garden. Read's Black Pine is of good size, conical, and well flavored. Delices d'Automne is of fair size, conical, high flavor, but unfitted for our climate. Haarlem Orange

is not worth growing. Kitley's Goliath is a large coxcomb variety, but unfitted for our climate. McAvoy's Extra Red is of good size, roundish, pretty, but quite acid; it is, however, as we stated several years ago, one of the best berries for preserving. Compte de Flandre is a large cone-shaped berry of good flavor, but does not do very well here. Read's No. 1 is a good sized berry, conical, flattened at apex, and of good flavor.

R U R A L C O M F O R T S .

BY THE HERMIT OF HOLLYBUSH.

AMONG the most enthusiastical lovers of Horticulture will be found a numerous class, who have selected some little sunny spot near a large town or city, built a cottage, and surrounded it with rural delights, that had long floated in their day dreams during their weary hours of toil and business, immured in the suffocating atmosphere of brick and stone obstructions; walled in from all the beauties a wise Creator has spread out for our health and enjoyment. These are the caged souls, who truly appreciate and delight in the cultivation of the objects treated of in your valuable periodical. There are many new pleasures fresh in Nature's store, to the satiated, and it may be added the vitiated taste of the weary denizen of a city. Cheerful and active life lends much to the charms of fruit and flower. So say the ladies who visit my Hermitage while partaking thereof, and viewing my pigeons, poultry, rabbits, goats, birds, bees, &c., a little world of health and productive comforts, ever new and interesting, the solid basement in the construction of the true "Otium cum dignitate" of life. The Aviary is an appropriate accompaniment to the green-house, viney, hot-house, apiary, etc., and a dove cot in the garden, one of the most useful and pleasing of objects. It may be made constantly to supply a quantity of fresh provision, particularly valuable at the season when animal food is so difficult to preserve or obtain in any inviting condition; then a few minutes suffice to prepare a dainty meal for an unexpected guest; and who will decline the appetizing allurements of a cold pigeon pie, a broil, or a stew? Every good housewife knows the value of feathers. The manure will be carefully preserved by the gardener as the most powerful guano for many choice plants, onions, melons, etc., while the young olive branches, and the aged grandsire, will be alike diverted from their little aches and cares, watching the lively commonwealth in their amusing antics, flying, building, laying, hatching, feeding, etc., while some of the carrier varieties might be put in requisition by young miss, to convey, ere the perfume wanes, the important nothing of some "*Billet doux.*"

But papa will not read this without a *Pshaw!* and perhaps a surmise that the Hermit is not the venerable anchorite he professes himself, and will therefore not heed the earnest appeal to raise a dove cot in his garden, which is the object of

this article ; so to continue. The great variety of form, color, and peculiarities of Fancy Pigeons, have always secured to them a large share of attention as amusing pets, from the remotest antiquity. Varro, Columella, Cato, and others, give directions for their management, showing the estimation in which they were then held. Pliny notes the value of a pair among the Romans, of some choice breed, probably carriers, as worth four hundred denarii, (about \$60.) A variety of this sort is still used by our pilots, coasting service, news boats, forts, lighthouses, as messengers, and for racing and flying matches against time and distance, with as much interest and excitement, if not involving such ruinous sums as the performances on the race-course. Germantown, near Philadelphia, and Williamsburgh, near New York, have long been famous for the numerous studs of these birds, to be seen on the wing when the weather and opportunity offer for the diversion. Their tumbling antics, as they circle aloft in the air by the hour together, or return with the welcome letter or color signal, form an excitement inconceivable to the uninitiated in the fancy. From many a loft in the close cities of Europe, as in our own, the hard worked mechanics may be seen at early dawn enjoying all of the fresh air he daily gets, out upon the house tops, releasing a few couple of high fliers to take their rapid sail into the ethereal blue, watching their uncontrolled and pathless way, his lungs and thoughts expand, and he forgets the world below and feels himself more free.

Collections of several thousand birds, containing many curious and valuable varieties, are to be found in some of the dove cots of our merchant princes. Others select one or two sorts, and breed them with such care that the birds will fetch from five to ten dollars each, such as a rich colored Almond Tumbler, with the swallow martin beak ; or a Carrier with wattle round its eye at least an inch in diameter, and head and beak three inches. A Pouter, which is now the bird in fashion, must be eighteen inches long, and pout or extend his air balloon above his crop to the circumference of eighteen inches. But *Ames' Pigeon Fancier* is the book to consult for all the properties required by the clubs. Much amusing and useful information will also be found of all the known varieties.

Most sorts will handsomely repay the little care and food required by these prolific birds, who monthly complete the task of laying, hatching, and rearing to maturity a pair of their offspring, who will in turn commence to mate and lay when five or six months old, thus producing from half a dozen pairs an incredible number in two or three years. Ill disposed persons have calumniated our pets as destructive vermin ; Stillingfleet, the agricultural writer, for instance, who perhaps never owned one ; certainly he was no fancier. On the contrary, we, who have seldom through life been without a great many, reject the slander, and declare them not only perfectly harmless, but valuable for frightening and driving off the multitude of little birds, who pilfer our cherries and fruit at such a fearful rate. As to scratching, they are incapable, and only when pressed by hunger will many kinds alight on the ground. The proper elevation of their house, and

a due supply of food and water within it, will secure safety from their foraging excursions of all kinds. Neither will they pick the fruit or plants, for green food they will not eat, except a trifling leaf or two of the red sorrel, eaten as medicine when improper food has made them sick. They naturally choose peas, rice, small corn, grain of all kinds, seeds of flax, hemp, and canary, wild turnip, and most weeds; so if, in the fall, they are permitted to become hungry, they will clear the seeds from every weed within reach, obviously to the great advantage of the slovenly farmer, who has so neglected his fence rows, or the gardener who will scratch over more beds than he can keep clean. For this purpose, and for the table, the common Blue Duffer, with black bars on its wings, the female generally of a darker blue and black called checkered, are the best suited, being hardy, fertile, and easily find their own living. Others will be chosen for ornament, flying purposes, etc.

There being upwards of thirty varieties of fancy pigeons frequently found in collections, it will be impossible to include their description within the limits of this article. The construction of the dove cot, management of stock, with many useful hints, must be deferred to a future number, and so we proceed with a description of the leading varieties, as they must appear when presented for competition at the poultry shows. One of the most valuable, and generally called the King of Pigeons, is the *Carrier*. This bird has been used as a messenger probably ever since Noah sent one from the Ark, and still continues where the electric wire is impracticable or unknown, and rapid communication essential. Its natural color is light gray blue, with black bars on wing and tail. Some are a glossy purplish black or dun; other colors are not esteemed full bred. They are rather larger than a common pigeon, and have a rich embossed protuberance of white flesh around the eye and nostril; it is supposed to be of use in their rapid flight. This should spread around the eye as large as a twenty-five cent piece, but it does not attain its full size for six or eight years, and some continue always increasing, although a Pigeon rarely attains its tenth year. The young squeaker will only have about the eighth of an inch. They are now worth from three to five dollars per pair in market. To train them, take the young from home a little further each time, until they will return several miles in as many minutes, from any direction; wind the message (on thin paper) round the leg, neatly tying it with thread: a small bag of thin stuff will be found most convenient to carry them in, as it is not requisite for them to see.

The *Fantail*, from its peculiar large spread tail, makes a very striking appearance on the buildings. Those of a pure white are preferred, and are generally the best birds; others have the shoulders of the wing black, blue, red, or yellow, and there are some all black, but being crosses to obtain the color, they are all usually inferior in their properties. The tail should have thirty-six feathers, well spread in three rows; extra birds have a fourth row; it is carried in the manner of the Turkey, touching with it the back part of its head. This bird must have

a long, swan-like neck, which it continually shakes in a singular manner. They are not good fliers, but are excellent breeders and nurses, when well supplied with food and water. It is said their odd looks and antics frighten away hawks.

The *Maggie* is of medium size; its head, crop, back, and tail of one uniform color; the remainder white: long red legs, pearl eye, and spindle beak. They are good fliers and breeders, and make a pretty flock.

The *Bald Pate* is a small Tumbler variety, noted for lofty flying, and performing summersaults in the air, and falling backwards as if suddenly shot. Their body must be of a uniform color; but the head, tail, nine flight feathers, and thighs, must be white; pearl eyed, small red feet and legs. These birds give little trouble and produce well.

The *English Pouter*, now the most in fashion of all the pigeon tribe, is a splendid large bird, measuring eighteen inches from beak to tail; circumference of crop not less than fifteen inches; legs, which must be well feathered, seven and a half inches. They are of various colors and shades, but the most esteemed and best bred are pied with white, and of the following colors: yellow, red, black, dun, blue, and silver. The two latter must have a double black bar on each wing and the tail; the white on the front of the crop, in the form of a new moon; a neat five or six leafed rose of white on each wing; and the leg and thigh clean white, evenly cut.

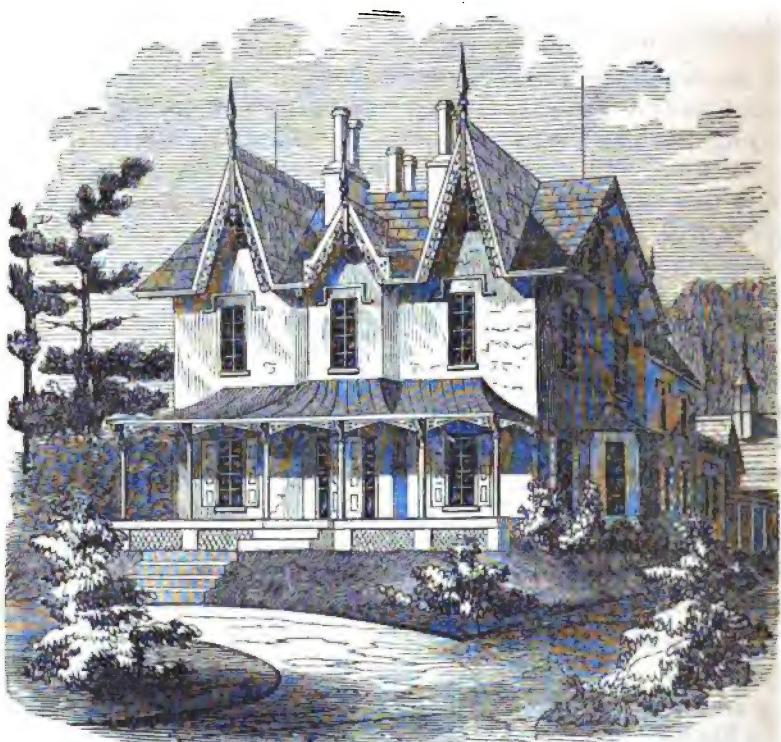
[We give place to the above, though somewhat out of our beaten track. That the dove-cot may form a useful and interesting feature of ornamental grounds, must be apparent enough to all who visit such places, for instance, as Springside. The subject, in this connection, has attracted but little attention here, but is working its way.—ED.]

"PIERMONT," RESIDENCE OF DR. NORRIS, WILMINGTON, DEL.

We have for some time purposed giving the accompanying engraving of the residence of our correspondent, Dr. George Pepper Norris, and have only been waiting for the descriptive matter to do so. A correspondent of the *Gardener's Monthly* has recently been there, and has furnished a description that we like so well, that we take the liberty of transferring it to our own pages. We shall at another time give a description of "Rockwood," the residence of Mr. Shipley, and which is said to be one of the finest places in the country. The following is "Graptolite's" account of "Piermont":

"The first place we visited is owned and managed by Dr. George Pepper Norris, whose name has been rendered familiar to the horticultural public by his essays, published in various journals. As the Doctor has excited a little sharp criticism, by his descriptions of other people's places, we went prepared to give him the benefit of a little close inspection of his own operations. The party

consisted of your correspondent and a Philadelphia 'expert' in Grape culture, &c. On inquiring in Wilmington where Dr. Norris's country place was located, we were informed that it was about a mile out of town, near the Poor-house; rather an unpromising locality, we thought, for the most enterprising horticulturist in Wilmington, but still in a direction much traveled by some amateurs. A short ride up the hill west of the town soon brought us to the gateway leading to the cottage, and here the fine scenery which burst upon our view, over a panorama of hills, valleys, and rivers, the well-kept carriage-



"PIERMONT," RESIDENCE OF DR. NORRIS.

road, the handsome lawn, the fine specimen-trees, and the elegant buildings before us, dispelled all fears which we had indulged that we should find material for criticism on the doctor's grounds. We felt sure that we were approaching the home of taste and skill.

"Dr. Norris has, in truth, one of the most beautiful situations which it has been our lot to examine for some time, and he has improved it in a very judicious and tasteful manner. The Gothic cottage is built of dark blue Bran-

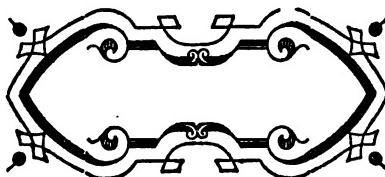
dywine granite, which blends its hues in a manner peculiar to this stone, giving an effect to the walls such as could only be obtained, with other stone, by the most skillful painting and shading, or by a mixture of paint and fine colored sand. The color is exceedingly rich and pleasing to the eye. The stable and other buildings are all built of the same kind of stone, in semi-Gothic style, and form a very handsome and comfortable-looking group.

"In Pear-culture the Doctor has made a good beginning, and fortunately has a good show of fruit this year. The Grape-houses, which, until lately, have been entirely managed by the Doctor himself, are constructed with the latest improvements in borders, &c., and exhibit more than an average degree of success.

"Fruit-trees in pots, for the orchard-house, have also been cultivated with very satisfactory results, by bringing them forward in the Grapery, and ripening them out of doors. The Peaches and Plums, now in fruit, will rarely be excelled in appearance, even with the aid of a separate house for the purpose.

"Part of the farm, under the care of an experienced vegetable-grower, is worked with great activity and skill, and produces a handsome return for the enterprise of the proprietor. We examined some acres which could scarcely be excelled in neatness and profitable growth by the veteran truckers of Philadelphia or New York.

"The place is yet new, and although it offers no remarkable points of instruction, or great novelties in planting or management, it presents these excellent distinctive features: it is magnificently located; it is laid out and constructed with taste and skill, and is *finished up* as far as its improvements have been attempted, while the whole of it is managed in a judicious and profitable manner. There is no foolish waste, and no rubbish about it, which is a vast merit. We think the Doctor may be permitted to hang up his hat on a high peg in the horticultural halls."



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

It will be seen, by reference to our cover, that a change has been made in the HORTICULTURIST. An interest in it has been purchased by Mr. GEO. E. WOODWARD, whose name has been familiar to our readers for a year or more past as a liberal contributor on the subject of Landscape Adornment. This change will place at our disposal such facilities as will enable us to carry out some long contemplated improvements, and otherwise add to the usefulness of the magazine in such a manner as to make it more acceptable than ever. We are not accustomed to speak of our own labors, but we think we may say that we have done something to give the HORTICULTURIST its present high character as an authority on all matters coming within its sphere: this character we shall do our best to maintain. In our new relations we shall be enabled to give increased attention to Landscape Adornment and garden ornamentation, but we shall not neglect other interests, especially that most important of all, the science of Pomology. We shall endeavor, in short, to make the HORTICULTURIST an indispensable companion, not only to the possessor of lordly acres, but even to the owner of a city lot; such a companion, indeed, as no sensible man would willingly be without. The progress of rural art since the establishment of the HORTICULTURIST has been of the most gratifying description, and no little of this progress has been directly attributed to the influence of this magazine. It shall be our object to increase still further this influence, until every home shall become an especial object of endearment. While we are laboring thus in our "sanctum," may we not ask that our friends abroad in the world will do something to increase our list of subscribers? Some have done nobly in this respect; others might do much. Let no man imagine that the present war has created a necessity for stopping his supply of horticultural knowledge; there are many other things that he can much better do without. Whatever other kind of business may be suspended, certain branches of Horticulture must be pursued with additional vigor, and no thoughtful man ought at such a moment to deprive himself of any means of knowledge within his reach. Mr. Saxton will continue to be our publisher, and all letters, etc., may, as usual, be directed to his care.

BROOKLYN HORTICULTURAL SOCIETY.—Undismayed by the times, the Brooklyn Society has determined to hold its annual exhibition. The list of prizes is a very liberal one, embracing the usual collections, and deserves, and will no doubt receive, the attention of gardeners and amateurs. We hope the friends of the Society, and the public generally, will on this occasion come forward and give it a generous support.

NURSERY FOR SALE.—Mr. Miller's advertisement in the present number presents a rare opportunity for a person who wishes to embark in the propagation of the grape. It is seldom that a stock of this kind is offered for sale.

THE CURCULIO AND THE GRAPE.—In examining a small vineyard lately, we found one bunch of grapes, every berry of which was marked with the crescent of the Curculio. We saw it on no others. We brought the bunch away, and the larvae are now undergoing their change. We shall soon know what they are.

RAVENSWOOD PEAR.—Mr. Erhard has just sent us a basket of this fine pear, figured in our last number. The quality of these specimens quite confirms our previous impressions. It is not large, but its earliness, productiveness, and good quality make it especially desirable for the amateur. Many of the specimens were fully a third larger than our figure, which we consider about the average size.

CORRECTION.—In our article on Newburgh Vineyards in last number, read Mrs. Say instead of Mrs. Fay.

MR. BARRY'S APPLE.—Mr. Downing writes to us, in reference to the specimens of this apple which we sent him, that he does not know what it is, being entirely new to him. Will Mr. Barry be so good as to tell us what local name it has?

THE CURCULIO IN THE BLACK KNOT.—Dr. Trimble has brought us some Curculios, in various stages of transformation, taken from the black knot on the Cherry. They are precisely identical with the Plum Curculio, a fact which we have before demonstrated. We think there can be no doubt that the Curculio in the knot, and those in the Cherry, Plum, Apple, &c., are all one and the same.

THE WOODWARD GATE.—While driving through Newburgh lately we came suddenly upon a gate, which seemed to us to have a familiar look. It was the Woodward Gate, figured in our April number, which Mr. Thomas had adopted as the entrance to his fine estate. We saw two or three others, but this was the prettiest and best made of them all; not only that, but it was the best gate we saw in Newburgh, notwithstanding others may have cost three times as much. We know of no other gate combining so perfectly the elements of utility and beauty; it is light, strong, simple, and cheap to a degree which should make it popular. We expect to see Woodward gates swinging on all the roads.

STRAWBERRIES IN WASHINGTON.—The following is an extract from a letter, dated July 25th, from Dr. John H. Bayne, of Washington City, who grows Strawberries very extensively for market. We should be glad to have a list of such other kinds as he grows, with an estimate of their value for market. All our readers, indeed, who raise Strawberries for market, would be doing a good service by sending us the names of the two or three kinds which they have found most profitable. Dr. Bayne remarks as follows:

"I have had a very fine and abundant crop of Strawberries the past season. The most profitable variety has been the Jenny Lind. I had them very early, and in large quantities, in market in advance of every body else. I ought to have made several hundred dollars every morning from the sale of them, and, but for the times, should have done so. However, I can not complain; I succeeded much better than I expected.

"Jenny Lind is the most reliable early variety I have ever cultivated. I shall cultivate it almost exclusively for an early crop. It is very beautiful in color, very early and tolerably productive, good size and flavor. I shall cultivate Jenny Lind and Prince's Magnate very extensively. They embrace every quality necessary to render them profitable for market, and if I were confined to two varieties, with my experience, I would unhesitatingly prefer these two. The Magnate is very large, productive, and fine in color. I have fully tested the merits of Wilson's Albany; it is quite large in size, and the most profuse bearer I ever saw. Notwithstanding its great productiveness, I shall not cultivate it to any great extent. It is exceedingly acid, and defective in the Strawberry aroma. It over-bears, and, I think, in dry seasons, will only mature a small portion of its fruit of good size. I have not seen any variety which continues to afford such a succession of large berries as Prince's Magnate."

EXHIBITION OF GLADIOLI.—During the last of July and the beginning of August, Mr. Bridgeman had an exhibition of Gladioli at the Nursery at Astoria. The beds were covered with an awning, and thus protected, could be examined with much satisfaction. This collection embraces some two hundred varieties, many of them entirely new here. The display was very brilliant. We shall, by and by, give a list of the best twenty-four in this and some other collections.

TRITOMA UVARIA GRANDIFLORA.—W. C. Townsend, Esq., of Bay Ridge, has just placed on our table a noble stalk of this superb flower. The stalk is over four feet high, the flowers occupying a foot of it. This variety is much finer than Tritoma uvaria. We think it was raised by Mr. Veitch, of Exeter. The top most or unexpanded flowers are of a deep red, tinged with bluish purple; those next below, just opening, are of a brilliant orange red; while those fully expanded and just passing off are of a delicate straw color, all the colors passing gently from one to the other, and being beautifully harmonized. It is a charming

flower, and we are much delighted with it. Mr. Townsend will please accept our thanks.

GLADIOLUS BRENTLEYENSIS.—We are indebted to Messrs. Spooner & Co., of Jamaica Plain, Mass., for a box of this superb Gladiolus. The color of the flower is a brilliant orange scarlet, with a pale yellow throat. It is large and well formed, and one of the best.

BROOKLYN HORTICULTURAL SOCIETY.—The semi-monthly conversational meeting of this Society came off at the appointed time. The attendance was very good, and the presence of a number of ladies gave an additional interest to the occasion. The members bring with them plants and cut flowers, and half an hour or so is spent in their examination; and thus between the flowers and the discussions the evening is pleasantly passed. We attended the last meeting, and conclude, from what we saw and heard, that these meetings have become a permanent and most valuable feature in the Society's proceedings. The show of flowers was very good. Mr. Bridgeman, of New York, had a stand of remarkably fine Gladioli, consisting of seventy-five varieties, presenting a striking evidence of the great improvement recently made in this beautiful flower. Mr. Humphreys, of Brooklyn, made a good display of pot plants, such as Dracænas, Caladiums, Begonias, Ferns, &c., all in fine order. Messrs. Dailedouze & Zeller made a show of very fine cut Roses and Japan Lilies. Mr. Burgess exhibited Phloxes, Antirrhinums, Gladioli, and the sweet-scented and almost ever-blooming Daphne cneorum. Mr. Barnes, of Williamsburgh, showed fine Double Hollyhocks, Phloxes, &c. Mr. Fuller had a few very choice Gladioli. Mrs. Henderson presented a very neat and prettily made wreath, and the flowers for once seemed delighted that they could go into public without being put in a strait jacket. Mr. Weir placed on the table some fine Japan Lilies and Gladioli, and also *Lilium Wallichiana*, of the purest white, in the style of *longiflorum*, but larger, and very fragrant. The remarks made by the speakers we copy from the *Eagle*.

"At eight o'clock the meeting was opened by the President, J. H. Degrauw, Esq. After a few remarks he requested Mr. R. G. Pardee, of N. Y., to preside.

"Mr. Pardee said that he had just returned from the country, and was very fatigued, but he could not miss such an exhibition, and was sure that many from New York would be there did they only know of it. He was really glad to see the Brooklyn Horticultural Society take such a stand, and particularly in such times. He said the Gladioli were the finest he had seen, and from these the ladies could see what a delightful field they had open for the display of their floral-taste. Raise seedlings and hybridize, and so get new varieties, even to surpass the splendid flowers before them.

"Mr. Brophy made some interesting remarks on the Pansy, or Violet, or Johnny Jumper, and urged the gardeners and amateurs to grow it from cuttings, instead of by seed. He gave the general standard of what was considered a perfect flower, in size, form, texture, and color.

"Mr. A. S. Fuller, of Myrtle Avenue, spoke of Gladioli, and gave an account of their mode of propagation and culture, and how they had been so greatly improved during the last few years; they can be raised from seed, but the bulb is the ordinary way. Take them up in the fall as soon as the foliage dies away, and keep them perfectly warm and dry until spring.

"Mr. Peter B. Mead, editor of the *HORTICULTURIST*, of New York, was present, and spoke, first, of the gardeners telling their customers, when they bought a plant, how they should take care of it, propagate it, and all about it, and particularly, when they came to these meetings, to tell all they know. He spoke of a new method of striking rose cuttings: Take a pan or saucer, fill two-thirds with sand, and then fill up with water; prepare the cutting in the ordinary way, cutting under a bud or an eye, and place it in this sand, and it will root in a much less time and with less failures than any other way. Also of the proper way of arranging bouquets, so that each flower can be distinctly seen; and commended the one exhibited by Mrs. Henderson. He spoke of the improvement that had been made in the Hollyhock, from the single to the full double, and the way they are planted at Mr. Kelly's place at Rhinebeck, N. Y., viz.: a large bed is planted with Hollyhocks and Dahlias alternately; the Hollyhocks bloom and are past as the Dahlias begin and continue till frost. The effect of this is very fine, and such as every one can produce on his own place. This was what was wanted in these meetings—plain, practical information, that all can avail themselves of; and if any one produces a new idea, give it freely, and some one may improve on it. He hoped the ladies would take a more active part in these meetings; if they did not like to ask questions, write them out, and the chairman could read them; in this way a vast deal of knowledge would be diffused and made available.

"Mr. Mead's remarks were listened to with great attention, and it is to be hoped the members will carry out his suggestions, and it will soon place the Society at the head of any in the country.

"Mr. Sidell followed in a few remarks, urging the gardeners to take more interest in the meetings and exhibitions, and for all to do what they could individually to carry out the suggestions that had been offered.

"After a vote of thanks to Mr. Mead and Mr. Pardee for their remarks, &c., the meeting adjourned to two weeks from last night, when they will take up the subject of Bulbs and Bulbous Plants, culture, &c., notice of which will be given in the *Eagle*.

Correspondence.

NEW ROCHELLE, AUGUST 14, 1861.

MR. EDITOR.—*Dear Sir:* The cold snap of last winter destroyed, to a great extent, the fruit-buds of all the Blackberries, wild and cultivated, in this neighborhood. No other part of the plant appears to be injured, and they are growing as usual, with some fruit on the late or second blooming. My crop of fruit is so small that I consider it a total failure. Cherry-buds were blasted in the same way. I have quite a large variety, and my trees are healthy, and in full foliage. Very little fruit was formed, and I did not gather a pound. The Wild Cherry trees are thriving, and are well laden with fruit. Apple trees fine, and generally in full bearing, and do not seem to be in the least injured by the cold or insects.

I have seen no nests of worms upon trees—none upon the grape-vines—and up to this time we seem to have entirely escaped from the ravages of the various tribes of destructive insects, and I do not hear any complaints in regard to the potato.

The late rain has been quite refreshing, and vegetation generally in our neighborhood was never more luxuriant and beautiful at this season of the year. Mercury this morning at eight o'clock 66°, and has not been above 84° this summer, and but four days as high as 80°.

[Thus writes Mr. Lawton. New Rochelle is a beautiful place, and would seem to be also, in many respects, a very favored one. In common with others, it has lost its Blackberries and Cherries, but has a good show of Apples. Its freedom from insects and the effects of the drought is remarkable; and then the thermometer has never been above 84°, while all around have been dried up, and burned up, and eaten up. Look out for us, Mr. Lawton, at the next "heated term."—ED.]

I WOULD like to know from the Editor of the HORTICULTURIST the name of the best white native Grape, exclusive of the REBECCA. Will you please hand him this slip, and oblige a
NEW SUBSCRIBER.

[The above is a postscript to a letter received by the publisher. It is from a subscriber living North, and we answer him by naming the Cuyahoga. We think highly of Allen's Hybrid from the little we have seen of it. The Maxatawny we also consider a fine Grape; but it will require a climate considerably south of New York to ripen it. The Anna is likewise fine, but it must be grown some distance south of your home. So, too, the Manhattan. These are all green (or white) Grapes.—ED.]

MY DEAR EDITOR:—"There's husbandry in heaven," if not on earth. The season in this region is maturing in perfection the old White Doyenné Pear on

trees upwards of fifty years old, the fruit of which the last twenty-five has been subject to a disease worse than the plague of Egypt or the Asiatic Cholera. This peculiarity of the season has reference to the county. In the city this variety has always maintained its original excellence. Very truly yours,

Baltimore, Aug. 1st, 1861.

MANY YEARS A MARYLAND SUBSCRIBER.

[This is good news indeed. We wish we could venture the hope that this fatal disease had reached its "climacteric," and that hereafter this noble Pear is to enjoy an immunity from the blight which makes its cultivation in many places almost hopeless. Has any similar condition of this pear been noticed elsewhere? —ED.]



VITAL FORCES IN PLANTS.—For the following communication we are indebted to Mr. Cranch, Corresponding Secretary of the Cincinnati Horticultural Society, before which it was read. The paper is very interesting, and contains valuable thoughts, but we regret that they are so ill-digested. The length of the letter prevents us from adding any notes of our own at present, interesting as the subject is.

"CINCINNATI, O., March 7, 1861.

"D. B. PIERSON, Esq.—Dear Sir : Agreeably to your request for a subject for the consideration of yourself and your horticultural friends, I will suggest that of Motion, or the Vital Force in Vegetation. Much is said by our writers about proper *nutrition* for plants, while that which is equally as important is barely hinted at, as though to teach it would produce ridicule from those professing to comprehend all that may ever be known on the subject. Vital force, or *motive power*, is one thing, and *food made nutritious* for plants by chemical action, is another thing. However nutritious the food may be of itself, it is in a static condition, and can not be transferred to the plant, or tree, against gravity, unless by some adequate force ; mere heat can't move it, while heat may cause fluidity and elasticity. Electricity is used to transfer metals in galvanizing, and as a motive power to machinery, and is doubtless our nerve power, or vital physical principle, derived by combustion of our food and air in our lungs, instead of oxygen, as we are taught, which is merely the *heating* principle of our natures, instead of *vital* principle.

"I will refer you to Patent Office Reports for 1844, pages 368—371, for *interesting* experiments in electricity, quickening the growth of different vegetables. Brown's American Muck Book, page 13, briefly refers to them. We know that the electrical condition of any matter is affected by any change of its density or composition. That chemical action or decomposition sets free latent electricity ; that the stirring of the earth by plowing, giving the air and sun access to the decomposable matter of the soil, produces some change, and promotes electric currents ; the earth and atmosphere being in different electric conditions, and the

sap being a good conductor, electricity flows and conveys the food, prepared by chemical action, to where it is needed. Unless this is so, why, in said experiments, did the vegetable grow so much faster? The ground was not made the richer by the electrical arrangement. Was it not because there was additional labor performed in supplying the increased nutriment, as in increasing the labor of carrying the bricks for expediting the completion of a building?

"May not Liebig *unconsciously* derive this *motive* power by the use of his *mineral* manures? May not there be greater chemical action, thence greater release of electricity in the ground, when *mineral* manures are used, especially if composted with animal and vegetable manures? Will not the *variety* of composition of such a compost *intensify* chemical action, promoted by the rains, soil, sun and air, and thus furnish to vegetation an *increased motive* power, to *convey* the *increased nutrition* to plants? If so, then it is a question to consider in connection with greater production and vitality of trees to resist disease.

"It is a common thing to hear of peach trees living and bearing forty or sixty years on the high *iron* lands of Ohio and Indiana. Doubtless, elevation of position has something to do with bearing, while the *iron* has much to do with the health of the tree and their age. Many will say that new ground is the best, because of its greater supply of nutriment. I will say, because of the decay of that nutriment, creating greater vital activity, without which nutriment would be of no use.

"Field's Pear Culture refers to use of iron for pear trees. Nails and iron have been used to save peach trees. George Graham, Esq., has used iron on pear trees to cure blight. Why? unless because of the electricity generated by the oxidation of the iron, and its being taken up by the sap—as in case of our blood—as a tonic. L. C. Ferris informs me that he knew of two large pear trees cured of the blight by being struck by lightning.

"Electricity pervades all matter, and that matter can not be changed and retain its latent electricity. *Read Corn Hill Exchange, London, of Robert Clarke, Cincinnati, 1860, p. 167, etc., 'Why we Grow,'* and you will find life is given out by *decaying* matter to *living* matter, loss and gain constantly going on, one equivalent to the other. P. 167—"But according to the view which I now propose, decomposition is necessary to develop the force by which organization of food or nutrition is effected, and by which the various purely animal functions are carried on: that decomposition not only creates the necessity, but at the same time furnishes the force of recombination." What is this force? is the question. Liebig's Complete Works on Chemistry, last chapter, pp. 24-38, on chemical processes and change of place as affected by electricity—see.

"Without being lengthy, many works on electricity may be referred to, showing it to be the silent mechanic at work for us while we are asleep, building up for us our food, etc., its power depending on the intensity of chemical action going on in the soil, arising from diversity of elements of soil, as acids, alkalies, animal, vegetable, mineral manures, nature of the soil, its condition of moisture

and porosity, air, sun, heat, and *frequency of stirring*, and the application of this power to what we wish to cultivate, depending on the ground being free of weeds, etc., which will equally *appropriate* this *mechanical power*.

"If in the above experiments referred to, there had been *weeds* permitted to appropriate a *portion* of the power developed by the decomposition of the metals used, there would have been less growth of that cultivated. *A certain extent* of electricity developed naturally or artificially, is essential for a *given* growth, and if that electricity is *partly* appropriated to something else, the *power* being *divided*, the *aggregate* growth of the *two* is but *equal* to what the *one* *should* be; hence the necessity of *clean grounds*, *well stirred*, enriched with a *variety* of *manures* to favor the *greatest chemical action*, and development of the greatest amount of *mechanical power*. If these crude, ill-digested, hasty ideas should prove to be true, on being investigated by competent horticulturists and agriculturists, they should be prepared for the press. *Nutriment* is one thing, and the *motive power* to transfer it another. A child might starve if its mother should refuse to carry its food to it. The food would spoil before conveyed, if the child must come to it. The tree must be supplied; neither *tree* nor *food* can move of themselves. Nature has furnished in the *food itself*, during its *preparation*, its *motive power*.

"You have scientific associates who would probably be glad to make some experiments showing that the *same* soil may be made to produce much more *largely* by *increasing* the *production* of the *motive power*. It can be done in a hot-house at a small outlay.

"We have valuable manures thrown away in the city, worth more than would support our poor and needy. Ashes, gypsum, blood, and tank refuse, if dried and ground with bones, is as good as guano, hoofs, hair, lime, charcoal, and annual black night soil, &c., &c., and their use effective, if above suggestions are true. Iron pyrites can be had cheap.

"Nature has bountifully supplied us with all sorts of *nutriment* for vegetation, as well as the *working* power to *combine* and *rearrange* matter. *Contact* is essential to promote chemical action; hence, necessity of *frequent* stirring the soil, to allow new air, new sun-heat and light, promotive of chemical action in soil, from which the *motive* power is derived; while nature furnishes chemical action in the leaves of vegetation, by the action of the sun on the sap in the leaves, and the friction of the winds yielding electricity of the air; the atmosphere, in its electrical condition, differing from that of the earth, begets the *negative* and *positive* action sufficient to overcome the gravity, and *transfer* matter to where needed.

"We see the superior progress and civilization of our day arise from the subjection of physical laws to mental ones, as in the employment of steam power for stationary and movable machinery, chemistry, electricity, &c."

(To be continued.)

BROOKLYN HORTICULTURAL SOCIETY—SPEECH OF PRESIDENT DEGRAUW.

[Continued from page 390.]

The orators, the poets, and the philosophers of Rome, invite the student who would sympathize in their emotions. Such is the ancient history of Horticulture, and the first rosy light that beamed after the dark ages, kindled a new radiance about our subject. It is thus encompassed by the attraction of its modern history. The gardens of Holland and the Netherlands feel the influence of the society, and arts revived. The atmosphere of Italy and France next bring rich odors. They soon scent the Isles of Britain; they pervade the Continent.

This department of our subject draws its copious details from the moral and political state of Europe, while the last four hundred years have been inditing their momentous records. To the understanding of the intelligent it here offers a rich feast, for its garlands have allure the eye and called forth the emulation of the most celebrated literary worthies and benefactors of the human race in every region of the world. Since the invention of the microscope, at the beginning of the seventeenth century, the most wonderful discoveries, alluring multitudes to the pursuit of vegetable science, have given animation to their diligence and recompensed their toils.

The history of Horticulture thus puts forth its buds and thus expands its flowers in ancient and in modern times. When the inquirer, who is curious to learn its present state, ascends that eminence from which its groves and walks may be discovered, his interest is yet further heightened by the most gladdening discoveries.

In Europe a fresh impulse to investigation has been experienced; and many a distinguished naturalist on the Continent is emulous to obtain a wreath like that which decorates the brow of him who lately towered aloft, and gave a magnetic influence to the charms of Horticulture in our own land. But now, alas! the mournful branches of the funeral tree are waving over him; yet, with the distinctive qualities of the same cypress, the memory of Downing shall ever be green and enduring. Throughout our entire land, new stores are yet continually unfolding to us, and the vegetable treasures in our own domain appear to transcend in real value its precious mines. And we rejoice in beholding in our own land a scene at which the Horticulturist has cause to glory. We have already as a people, enriched by numerous treatises and volumes, the library that illustrates the natural products of the earth. And learning, genius, and talent are emulated by indefatigable industry and practical skill. The gardens that surround our city are abundant evidences of this truth.

Throughout the entire Union, as well as disunion, enterprise is now directed to the culture of the most valuable plants. Besides sectional objects, confined to

particular regions of our country, there are others also claiming universal notice, which may still be denominated national.

Of these the first, by its importance, is the cultivation of the vine; experiments have been successful, as the voices of our intelligent and enterprising farmers and horticulturists proclaim. The vine will flourish in our country, in various latitudes, and it yields to us an agreeable and valuable product. Yes, and native wines derived from it, and from the fruits of our orchards, and of our gardens, may be hailed by the philanthropist as the harbingers of a new era. The epoch may not be distant when the draughts that are inebriating and destroying thousands of our population shall be superseded by the use of milder and of salutary beverages.

Had I not already dwelt so long upon the first of the particulars, that were proposed for your attention, I might here enlarge upon the future prospects of our favored land; I might collect before you the anticipations which are suggested, by its unparalleled advancement in the facilities of transportation, and the extent of commerce—its canals and railroads, the staple product of its soil, and its natural adaptation for the most enlightened of all people on our globe. Exhibiting in their true colors the glories that may one day reach, like the celestial bow, from our Atlantic to our Pacific confines. I might direct your contemplation to this graphic symbol of our great national destinies, and when all sounds of a disunion shall have passed away, when the rude storm of political animosity shall have been stilled, and when the last echo of the thunderings that arrest us in the South shall cease to roll, as the prismatic arch, the token of an everlasting covenant of peace and union shall shed its smiles upon our soil, I might depict the happiest of lands, that, like an aromatic "field which the Lord hath blessed," shall send up to heaven, from the wide extent of its vast territories, the mingled perfumes of its cornucopia, sweet-scented fruit and fragrant flowers. As we mingle our sympathies with the subject of this evening, we may with joy reflect upon the numerous, the varied, and the enlivening themes by which Horticulture, with its stimulus to industry, is calculated to engage the intellect. And there is a moral halo that invests our subject. It can improve the heart. As we behold the wonders that abound throughout the vegetable kingdom, we are lost in the interminable manifestations of the Supreme. The organization that pervades it lifts up our hearts unto an Omniscient Creator. We can not view the mechanism of a single plant without this sentiment. We see the several parts of which it is composed arranged with a regard to its nutrition and perpetuity demonstrating a contrivance the result of the profoundest wisdom.

The succession that is discoverable in the annual circuit of our globe, directs our thoughts to Him,

"The life and light
Of all this wondrous world we see."

Flowers, fruits, and culinary plants attain perfection in a series that must com-

mand our gratitude. Not lavished with an indiscriminate profusion at some one forward crisis of the year, they are dispensed with an all-wise frugality, and yield their fruits every month.

Their nature also is adapted to the condition of mankind. Where sultry beams are shed upon the torrid zone, umbrageous groves extend their branches; where the polar skies are cheered by a short summer's reign, its vegetation is distinguished by a rapid progress to maturity. Where manual labor is discouraged by oppressive heat, and where the mind is destitute of moral enterprise, abundant aliment is yielded to the lowest cultivator of the soil. But in the temperate regions of the earth, where, unexposed to the depressing influence of an ungenial atmosphere, man walks abroad delighting to exert his energies, here nature calls forth talent, and awakens industry, by obstacles which she allures them to surmount. As if anticipating the caprice of man, in countries where the valley and the mountain each invite his residence, the products of the torrid zone are found within this vale, and on that towering summit is displayed to view a northern vegetation. In the distribution of the odors that are breathed around us, nature seems to have been regulated by the same economy, where happiness is found only in the refinement of the senses; where in luxurious repose, the Hindoo, with no zest for intellectual delights, seeks an innocent enjoyment in exhalations of sweet flowers, these the loveliest of plants, that are unrivaled in their perfume, dispense aroma in rich offerings to the ambient air.

“ Who has not heard of the vale of Cashmere,
With its roses the sweetest that earth ever gave? ”

Where man, upon another continent, is seen degraded by the most loathsome appetites, and we are told that by a remarkable peculiarity, which he possesses, in common only with the inferior animals, the Hottentot experiences an emotion of delight at the carrion-smell of what regales the hyena and the vulture, in that region of the earth—as if the poor savage was to be indulged in his caprice—while oriental perfumes are withheld, plants distinguished among us by their offensiveness, the Stapelias, in their variety, abound upon the soil, and fill the air with their putridity of savor.

Wherever man resides are found nutritious berries, which are nutritious to all. The barberry, the cranberry, and the dwarf mulberry regale the distant Laplanders, and beside these, the currant forms a wholesome food for the inhabitants of Greenland. Does the exhausted native of warm climates, parched with thirst, ask such plants as may be most refreshing to his feeble energies? lo! nature's bounty has supplied him with the melon, and the pineapple, and all cooling fruits. And does the mariner, from the long use of salt provisions, need some prompt remedy for its scorbutic influence, he may coast along the shores of the most distant regions of the north or south and be furnished with the succory, the cresses, and the wild sorrel, from Siberia to the remotest of the Pacific Isles. The Bo-

tanical Materia Medica is but an enlargement of this interesting thought. But on a theme so vast I dare not venture further. It is replete with interest whithersoever we direct our eyes, from the most attenuated lichen that is scarce discoverable on the rock, to the huge brobab developing its mammoth trunk of eighty feet; and from the lowliest moss that peeps above the surface of the soil, to the towering palm tree of the tropics. As the march of knowledge shall advance, and men be more minutely taught the mysteries of nature, this wide field of science with an increased earnestness shall be explored. What has been discovered in the heavens by the rare genius of Laplace, bold, brilliant, and aspiring, by some future Linné may be accomplished in regard to the earth; and while the blue vault, and while the verdant landscape, are more and more distinctly uttering,

“The hand that made us is divine,”

the philosopher and Christian will continually be attracted by new themes of wonder, love, and praise.

It has been my object not to venture far within this vast domain, but merely to suggest what may be interesting in the subject proposed. A single pearl proclaims the boundless treasures of the deep; one gem is witness of exhaustless mines within the earth; and a few fitful rays from the canopy above may reveal to the imagination innumerable worlds of glory. Under the influence of these thoughts, I would now say to the members of the Society, while you participate in the intellectual and moral stores of Horticulture, you have a two-fold object worthy of your tenderest solicitude. It is for you to collect the vegetable treasures of every land and enrich them with the glories of our own. Were public grounds provided in our city, or in its suburbs, we doubt not that we should rejoice at the benign results. We have a soil which, like the heritage of ancient Israel, is the glory of all lands; within the limits of our wide and far-spread country may be discovered an appropriate residence for most every plant in all the four-and-twenty classes of Botany.

In the mythology of ancient Rome, it was ingeniously fabled that Pomona could not be induced to shed a smile on any of her suitors, until her heart was touched by the devout breathings of Victorius, and in the tenderest bonds were joined the god of merchandise and the divinity of gardens. The ingenious fable is instructive for our art.

“Thrive most
Whose commerce has enriched the busy coast,
He catches all improvements in his flight,
Spreads foreign wonders in his country's sight.”

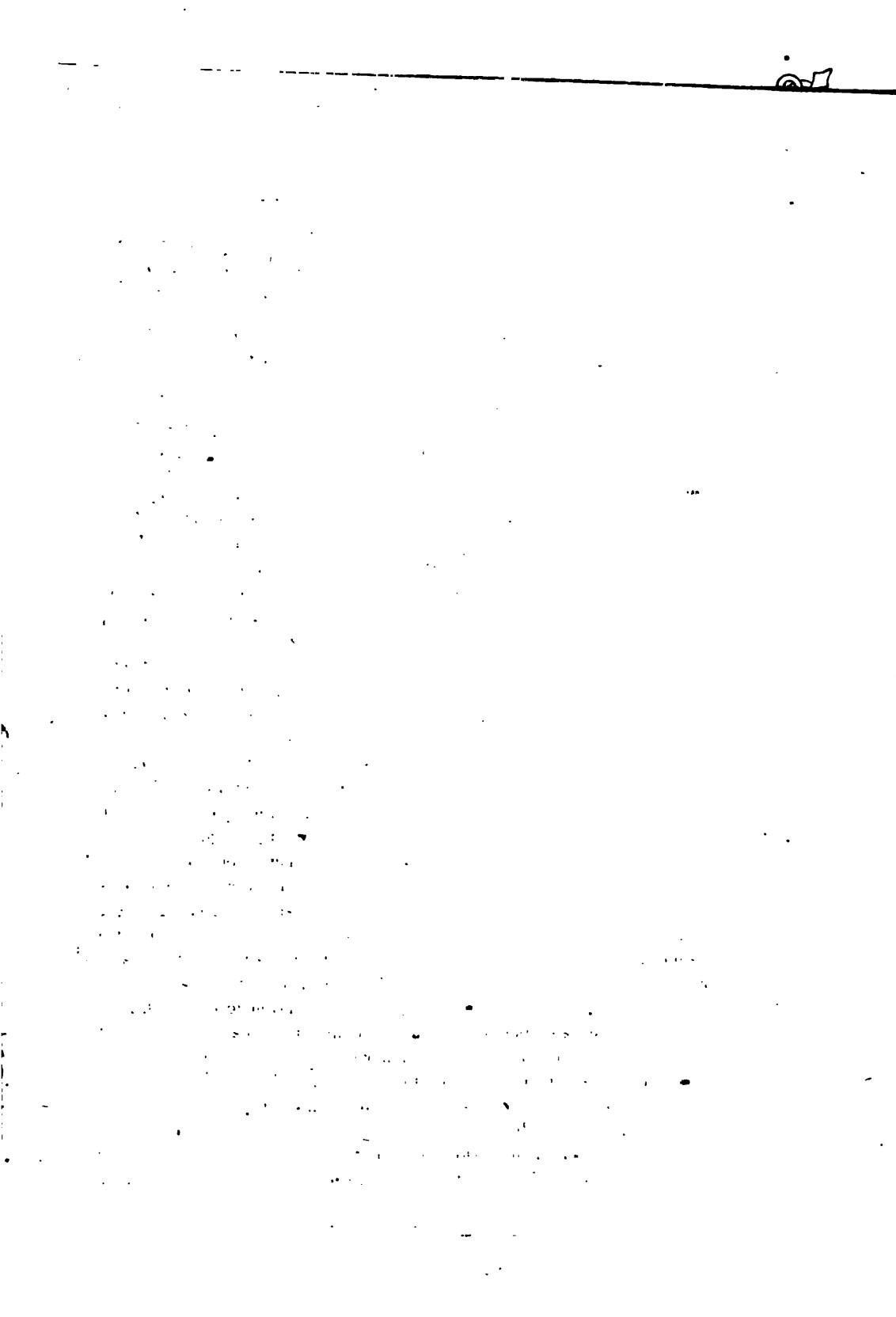
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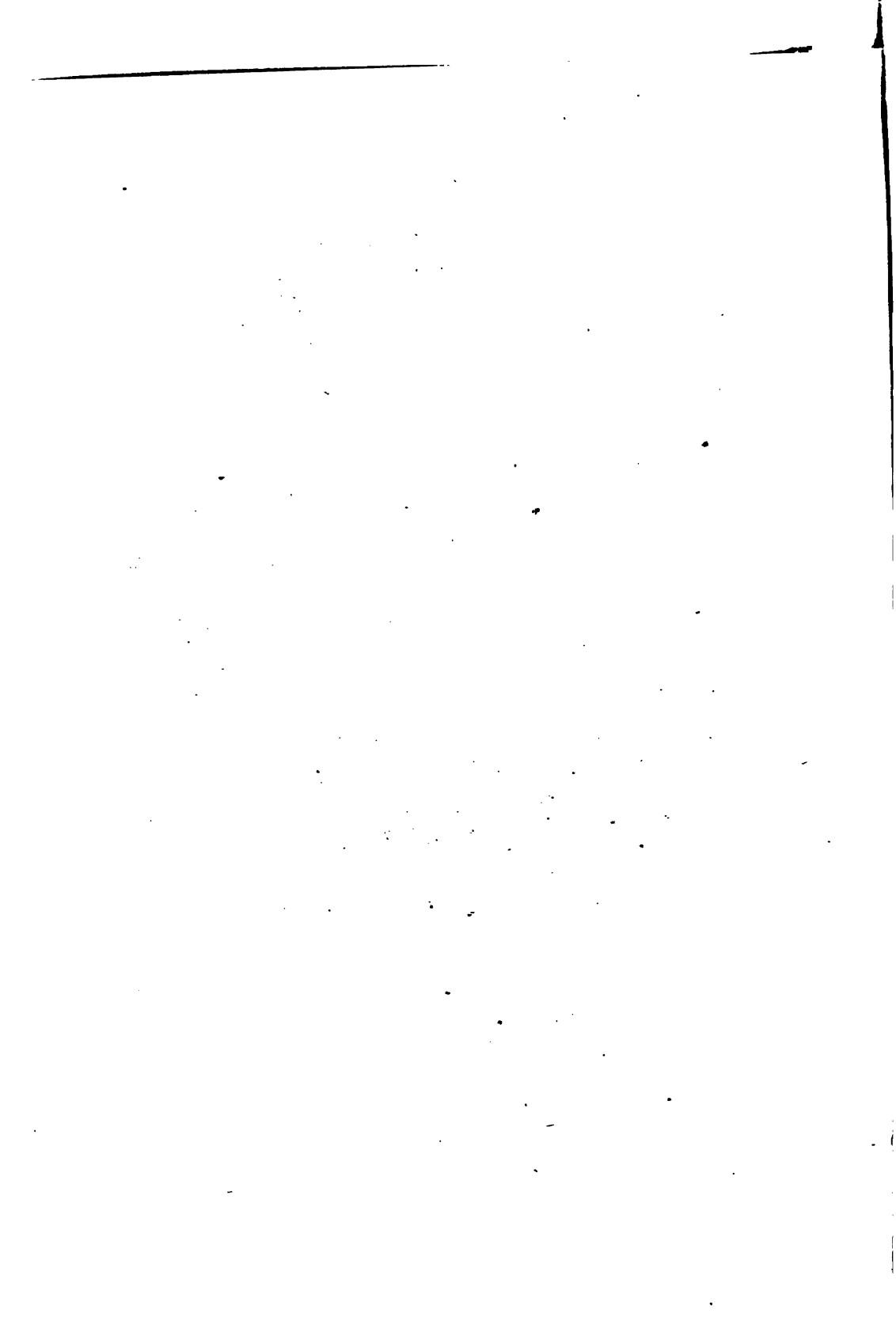




CAMELLIA JAPONICA,
var. A. J. Downing.

for THE HORTICULTURIST
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Hints on Grape Culture.—VIII.

NOT having yet said any thing in regard to the *Proper Age for Planting*, and the character of the plants, the present would seem to be a proper time for a few seasonable hints on this part of our subject, which we deem of sufficient importance to make an object of distinct treatment, since we find a great deal of misapprehension to exist in regard to it, seriously affecting the progress of grape culture. There is an opinion so prevalent as almost to amount to an axiom, that the older the vine the greater its value; in other words, that the value of a vine for planting increases with its age, the precise stopping point being nowhere indicated. This is a great fallacy, productive of much injury to the purchaser of vines. There is a similar fallacy prevalent in regard to trees and plants generally. We shall confine our remarks at present exclusively to the native grape, and endeavor to place the subject in a light that will be a guide to the reader in the purchase of plants.

We remark, in regard to vines propagated in the open air, that the first season's growth from a vine five or more years old is no greater than from a good vine one or two years old; as a general thing, it is not near so great; and the younger vine will subsequently be much the most vigorous, producing a larger quantity and better quality of fruit. The reason of this may be found in the fact, that the injury caused by transplanting is greater in an old vine than in a young one, and the ability to repair this injury is less in the former than in the latter; just as an amputation may be more safely performed on a young person than an old one. But even supposing the check to be equally great in both cases, the old vine will produce fruit no sooner than the younger one; but the latter, at the third and subsequent years after planting, will be much the best vine. The shock of transplanting a large vine is so great, that it places it, for all practical purposes, in the condition of a young vine, with the serious drawback of not being able to recover so soon, if at all, its normal vigor; indeed, a vine of any considerable size can not often be successfully transplanted in our climate; for though it may sometimes live, it seldom or never afterward produces fruit fit to be eaten. In addition to this, all good systems of training require that the arms should be placed not higher than eighteen inches from the ground, and this makes it necessary to cut down an old vine to that height; and this again in a manner brings an old vine to the condition of a young one, with the disadvantages named above, so that nothing is gained even under the most favorable circumstances. With very careful transplanting, and skillful after management, a couple of stout canes may be had the first year from a vine four or five years old, but this will not be often; one good cane

is all that can be reasonably looked for. Two good canes may more frequently be had from well-grown vines not more than two years old. If nothing is gained in point of growth, much is lost in labor and expense; for an old vine not only costs more money, but requires more time and labor in planting, and the work is usually not half as well done as in the case of a young vine. The inference from all this is, that a vine one or two years old is better for planting than an older one.

Our remarks thus far have been somewhat general, but we think dispose of the general misapprehension, that an old vine is better than a young one. Let us now be a little more specific, and examine the respective claims of vines made from *Cuttings*, *Layers*, and *Eyes*. What is needed in all plants is a good system of roots, especially secondary roots; these are necessary, not only to insure success in transplanting, but also the future well-being of the plants; for it is these secondary roots which nourish and sustain it, and give excellence and size to the fruit. Cuttings of the vine, as ordinarily grown in the open air, are not in the best condition to plant at the age of one year. They would generally be good plants enough if sufficient room were given them, and a little more attention paid to their growth; but they are usually put in a poor soil, and crowded closely together, so that they are not under favorable conditions for the formation of a good system of roots, and a foot or so of feeble top growth is all that is usually obtained. They ought, under such circumstances, to be transplanted into a good soil, given plenty of room, and grown for another year to a single cane, when they will be in good condition for sale. As the purchaser can not always see the roots, he should select only such vines as have a fair-sized, short-jointed, well-ripened cane, and pay for the privilege of doing so. Short cuttings of two eyes may be grown under glass in pots, and will make better vines in one year than cuttings in the open air will make in two. At the proper time we shall explain how this is done.

Let us now pass to *Layers*. The mode usually pursued in making vines from layers has the effect of producing a few long primary roots, by no means the best for making a fruitful vine. When such are bought, the roots should be shortened in freely, to encourage the formation of secondary roots, and increase the chances of making a productive vine. Another class of layers, more carefully made, are very well furnished with proper roots, equally distributed all along and close up to that portion of the vine which has been layered. These are very much better plants than the former, but have been made at a greater cost of time and labor. We are not partial to layers for making a vineyard, and it is only those last described that we can recommend; but the roots even of these should be shortened in. Layers are best for those who want some fruit immediately, and a supply of wood to propagate from, the latter being produced freely, the wood alone often more than paying for a vine during the first year. The layer, of course, should be only one year old, and should have but one cane.

We lastly come to plants made from *Eyes*. This we consider by far the best method of propagating the vine; plants thus made we prefer to all others. They

are generally grown under glass, and when well managed are, at the age of one year, better than cuttings at two. The roots are more abundant and fibrous, and the wood and eyes better developed ; the vine therefore transplants better, and makes a large growth from the beginning. Eyes may be grown a second year in pots with decided advantage, but at considerable additional expense ; so few, however, are willing to pay for it, that the nurseryman feels no encouragement to take the extra trouble. The purchaser, in this matter, is undoubtedly the greatest loser. If the same pains were taken with the native vine that we take with the foreign in preparing the soil, growing the plants to a fruiting age in pots, transplanting, etc., there is no reason why nearly the same general results in regard to early fruiting should not be obtained in the vineyard that we see in the grapery. Whether it is cheapest to pay a fair price for a good fruiting vine in a pot, or wait three or four years for the beginning of a crop, each purchaser must determine for himself, according to his means or his views of economy. If vines can be had that have been once transplanted, presenting the conditions that we have named, and grown to a single cane, they may be considered among the best.

We trust we have now put our readers in possession of information that will be useful to them in the purchase of vines ; and we conclude by advising them to buy no vine, whether a cutting, a layer, or an eye, that has not a good sized, short jointed, well-ripened cane, and plenty of fibrous roots.

LANDSCAPE ADORNMENT, No. XVI.—WORKING PLANS.

BY GEORGE E. WOODWARD.

THE successful pursuit of Landscape Gardening, like all other liberal arts, depends upon a thorough understanding of results, and no work of excellence can be perfected without a close and careful study, in advance, of all its details and effects. The assistance derived from the compilation of a design on paper is of great value, for the reason that one is enabled to secure suggestive beauties, harmonize them, and reject features that are not desirable, as well as to investigate the practicability or impracticability of the mechanical work necessary. How often do we hear stated, If I were to do this thing again, it should be managed in another way ; that difficulty did not present itself until the work was nearly done, and it was too late to remedy it. It did not occur to us that we might have so located that road, the barn, the garden ; in fact, made every thing far more beautiful, infinitely more convenient, and for about one half of the expense. We see our mistake now, but the deed is done. What might have been studied out on paper, where all blunders could easily have been remedied, has been actually executed in real materials and at a heavy cost, and thus the would-be amateur takes his first lesson in Design. Experience is a dear school, but some people will persist in being educated there.

No sensible man would presume to build a house without a well-considered plan, and for the reason, that it enables him to study out and combine the principles of economy, convenience, and beauty, and by no other process can he reach or ap-

proach completeness in these desirable features. Now a well-contrived house is one that requires the least possible amount of labor to keep it unexceptionably neat; and there is that difference in houses of precisely the same class and accommodation that makes it necessary, in one case, to have double the number of servants of the other to keep them in like order. All experience proves that in the hands of real talent, whether amateur or professional, a plan enables one to so contrive his house that he shall get the full limit of accommodation for his money, the most convenience for his family, and put the same in a well-proportioned and attractive form, and that time is well spent which is devoted to a thorough compilation and revision of a plan of construction. Even if paid for at an over extravagant rate, it is but a mere bagatelle of its value. Intelligent men understand architectural and mechanical construction from a plan. They know that the work of the architect, the engineer, the painter, the sculptor, the composer, etc., etc., can only be successfully reached through the medium of carefully studied plans. They are the great stepping stones to success in all the arts, and essentially so in that of landscape embellishment. Great paintings do not spring at once from an artist's brain, but only through a succession of plans; every effect of color, costume, expression, position, etc., is separately studied with labored care, and the finished work in marble has in parts, and as a whole, been moulded and studied in the plastic clay.

The value of plans in all departments of landscape embellishment is but imperfectly understood; popular impressions are, that they can not be made, and the less one knows about them the louder he is in their condemnation. As a medium of communication between the brain that conceives and the hand that executes they save a world of talk and time, for practical working drawings should tell their own story so plain as not to admit of a misunderstanding, and when placed in the hands of a workman he comprehends at once his duty; there is then no hesitation as to how he shall act, he wastes no time in asking questions, and gives himself no anxiety about the result. He has had communicated to him the exact manner of construction, the materials, and the relations they bear to each other, and in a language clear and concise, compared with which words written or expressed become as nothing.

Intelligent proprietors who seek fine effects with the least expenditure can readily understand the advantage of studying plans, for it is a well-known fact, that the arts of design, in some of their varied applications, afford the power of expressing on paper every stage of progress in the execution of any work of art, and that the whole process of arrangement, its utility, convenience, and harmony, can be traced step by step through all its combinations.

It is quite necessary to adopt some system in carrying forward improvements, so that they shall occupy those places in which they will be of the most value, and that they be constructed in the most advantageous manner. To know what one wants when improvements are undertaken is to know a great deal; to com-

municate those wants to others requires that one should first understand them thoroughly ; to understand them thoroughly it is necessary to study their various developments, from the first conception to the practical working reality, and to do this successfully and economically there is no such medium as a plan.

There is precisely the same reason why one should prepare a plan of his grounds as he should of his house. There is a convenience as well as a beauty of arrangement to be reached by study, and an inconvenience as well as a constant addition of labor always attendant upon a work of chance. If we refer to those country seats, or farms, or estates which are the most successful, both artistically and financially, we shall find that the whole process of their improvement was thoroughly systematic, and the same is true of any work of art, or, indeed, of any business in life.

The two most prominent professional authors of England on this subject, Repton and Loudon, placed the utmost importance on the value of plans, and their great successes were mainly attributable to them. Repton made drawings of every thing he devised, and Loudon's published works are profuse in illustrations ; his isometrical perspective drawings are evidence of the extent to which he carried, and the value which he placed on, this important accessory to a profession of which he was an acknowledged leader.

THE STRAWBERRY.—III.

BY ANDREW S. FULLER, BROOKLYN, L. I.

In our article for July, we gave a list of those essential good qualities which are requisite to make up a first-rate strawberry. But it is to be regretted that we have no one variety in which all of those good qualities are combined ; and in giving a descriptive list of a few popular kinds, we think it is important that their faults should be mentioned as well as their merits.

We are well aware of the fact that tastes differ, and what one person would call a defect another would call perfection. But there is one point upon which we all seem to agree, and that is, we are continually looking for something different from that which we possess ; and it is to this continually longing for something better (with a willingness to pay for it) that we may look for the cause which has produced such wonderful results in the several departments of pomology.

Wilson's Albany, one of the most productive varieties known. It continues a long time in bearing, very hardy, dwarf habit ; foliage dark, rich green ; fruit large to very large, irregular, conical ; color dark dull crimson ; flesh firm, deep red to the centre, very acid, but if allowed to remain on the vines for two or three days after it colors it becomes mild and quite good. It is too acid to become a general favorite, and its dull dark color, after being picked a few hours, changes to a dark muddy maroon.

Triomphe de Gand.—This, we believe, is the first, if not the only variety of foreign origin that has given any thing like general satisfaction. It is a magnificent variety in all its proportions, a strong grower, leaves large, bright pale green; fruit stalks stout, and stand well up; hardy and productive; fruit very large, irregular; color deep bright crimson; seeds prominent; flesh firm, very sweet, colored to the centre; calyx adheres so firmly that the fruit is often damaged in parting it.

Its peculiar flavor is somewhat cloying; besides, it possesses scarcely a particle of that delightful aroma which evidently belongs especially to this class of

Bartlett.—A very hardy native variety, valuable for field culture, as it bears large crops even when it becomes very much crowded. Fruit stalks strong, leaves dark green, and of good substance; fruit large, conical, very regular in shape and even in size; color bright crimson; flesh firm and moderately sweet, with a rich strawberry aroma. The flesh is too light colored, and it is wanting in definiteness of flavor.

Vicomtesse Hericart de Theury, (Foreign.)—A very distinct and valuable variety. Lobes of the leaves very short and nearly round, their surface presenting a crimped appearance; dark green, of good substance, notwithstanding the summer sun exceedingly well. Fruit large, light crimson, firm, sweet, and rich flavor; moderately productive, and very hardy.

Trollope's Victoria.—A well-known variety; much admired for its large size and beautiful appearance generally; but it is not very productive, and in heavy soils it is quite tender. It is valuable for forcing.

Delices d'Automne.—A beautiful large, light crimson variety, of excellent quality; rather soft for market purposes; said to be tender in some localities; with us it has been hardy and quite productive.

Jenny Lind.—Very early; bright scarlet, cone, good quality, medium size; hardy and productive.

Reine Hortense.—Large, dark crimson, quality best, hardy and moderately productive. If this variety proves to be sufficiently productive, it will certainly become very popular.

Downer's Prolific.—Wonderfully productive, fair size, and good color, but wanting in quality.

Austin.—Very large, fair quality, too soft, acid, and usually hollow.

Boyden's Mammoth.—Beautiful large light colored berry; late and productive, but quite insipid.

Chorlton's Prolific.—Seedling of the Iowa; more prolific and larger, but no better in flavor.

Walker.—A dark colored variety, of very rich quality, but neither large nor productive.

Hooker.—Medium size, dark crimson. For flavor we think this may be placed at the head of the list, but with us it is quite tender and very unproductive.

Oscar.—Very large, dark crimson, flesh firm, fine flavor, dwarf habit; a poor grower, and very unproductive. From the beautiful appearance of this plant, and the high recommendations which it had received, we expected much, but after a two years' trial under good care, we can not recommend it.

Boné de St. Julien.—A large fine flavored berry, which promises to be very productive and fine. Not sufficiently tested.

Crimson Queen.—Large, rich crimson; good grower. Promises well.

May Queen.—Very early, medium size, good flavor; a poor grower. The sun burns the foliage badly.

La Constante.—Although not as productive here as represented, still a fair bearer. Berry large, handsome, juicy, sweet, and high flavored. Will probably prove a popular variety.

Duc de Malakoff.—A large irregular formed berry, dark colored, flesh firm, juicy, and high flavored; bears rather shyly.

Wonderful.—Large, irregular formed berry, often coxcomb shape; firm flesh, high flavored, but a poor bearer.

Wizard.—A large berry, but much less in size than represented; flesh soft, acid, and deficient in flavor.

Bicton Pine, *Deptford White*, and *Excelsior*, have all proved to be the same with us, and none of them worth cultivating.

All the varieties that we have named are Hermaphrodite, or perfect flowering. As there has been but two pistillate varieties that we have ever cultivated (*Hovey* and *McAvoy's Superior*) worthy of a place in a choice collection, we think it is of doubtful propriety to encourage pistillates at the present time, when we have so many excellent kinds that do not necessitate the trouble of growing two varieties to get a crop of one.

[In Mr. Fuller's article on the "Sexes of Strawberries," the remarks that we had appended were omitted as a matter of convenience to the printer. It is a very interesting point in the discussion of the Strawberry, and another opportunity will soon be presented of bringing it forward. Mr. Fuller's descriptive list thus far, curiously enough, is composed entirely of Hermaphrodite varieties; he will, we suppose, put the Pistillates together in the same way. There is one point we wish to note here: Mr. Fuller seems to attach no little importance to the color of the flesh. If the other points are unexceptionable, we regard this as a matter of indifference: we consider it no objection at all to the Bartlett or any other Strawberry that its flesh is light colored.—ED.]



THE IMPORTANCE OF SELF-ESTEEM.

BY FOX MEADOW.

PHRENOLOGY teaches that in some human craniums this very wonderful organ varies to a very considerable extent; that in some individuals the feeling of "*I am*," the great *I am*, scarcely has an existence; and that such individuals have oftentimes to refresh their memory with the fact that they are *really in existence* before the first faint trace of Self-esteem becomes cognizant. We are not aware of any phrenological statistics that furnishes substantial data for this scientific statement; therefore, we think Phrenology on this point to be in error, and that we sincerely hope, for the future, that our scientific phrenological friends will take into consideration the influence of the "Almighty Dollar," and its "connection" with the human brain, before they make any further statements of the lack of "Self-esteem" in the human organism.

We emphatically deny the phrenological statement that "some men want more Self-esteem." We think we have all enough, and some too much for our own individual interest. Our opinion of the sufficiency of Self-esteem existing in the human brain very profusely is amply proved to us in our every-day walk through life.

An old acquaintance of ours, who by profession was a journeyman tailor, but an "adept" in cutting broadcloth to fit the carnal man, after a time grew rich; so rich, indeed, that one day he said to his better half, "My dear, I am going to buy a place in the country." "Do, love," was the sweet reply, and the mother of the little "rosy cheeks" said that no one on earth would be able to better appreciate the comforts of country life than herself and family. A garden well supplied with plenty of good fresh vegetables every day, and lots of all kinds of small fruits, for puddings, pies, desserts, and preserves, and an orchard to supply us with apples for pie-making all through the winter. And then, again, think of the delightful shade that trees in the country yield during the oppressive heat of summer. Won't it be delightful? Oh, for a place in the country! So it was purchased.

It was a nice, snug little farm. The house was old-fashioned, to be sure, but it suited the purposes of the farmer, its previous occupant, very well; and it is true that the dwelling was not decorated off with trees, shrubs, and corkscrew roads; but when we come to consider that few farmers care any thing about "shady trees" around their dwellings, or gardens which contain much else than those species of the vegetable creation which caused Adam and all his sons to "earn their bread by the sweat of their brow," we have a sufficient reason why there were no trees around *this* house.

Our friend was determined to have a great many things altered. He would set to work and plant trees; they would soon grow up, he was told by a "man" who represented a "firm" at a distance. And then there was *that* "old orchard;" the trees were too old to be serviceable; the better plan would be to cut them down

at once, and plant young trees—soon get into bearing. “Some trees I sold last year had apples on this!” “Indeed!” said our friend; so he chopped down the apple orchard, to be replanted with the “leading varieties” recommended by the “man from a distance.” The next point to be considered was the alteration in front of the house. The public road was too near the door; he wanted a large, fine “yard,” with a carriage road through it, and plenty of trees in it. This lady suggested the propriety of obtaining the advice of some “practical gardener” on operations so extensive. But here “Self-esteem” grew out instantly into wonderful, immense proportions. “How can a gardener better know my requirements than *I* know them myself?” And this wonderful pronoun *I* stood as erect and with as much dignity as Beauregard after battering down a helpless Sumter. Self-esteem then went to work, and cut a very fine road through the finest grass meadow on his farm. The *public* had an improved road for which they were very thankful, and lots of poor men had plenty of work. Our friend had also achieved his point; got a “good yard,” on the front of which he put a very fine entrance, and made a carriage road agreeably to the angular formations of his own constituencies. John the coachman, however, could never drive over this road to suit his employer. It was so annoying to see the man forever driving over the “corners of the grass.” John could never be made to understand the philosophy of first driving on the straight line, then gracefully sweeping round a Q with its tail off, and up another straight line, terminating with a right angle to the front door. This road was our friend’s “own design,” and there was nothing like it in the neighborhood. This was one important point; and the next thing was to plant the “yard;” so he marked the places for the holes all over the “yard,” and the men were to be sure to dig them deep enough, and big enough, for he was going to plant “big trees,” as he could not wait for small ones to grow.

The man who sold the trees was on the spot *just in time* to see what our friend wanted, besides the apple-trees for the new orchard. Scarcely know. “What kind of trees do you generally sell for such situations as this?” “Oh, evergreens, sir, evergreens! every body now, sir, plants nothing much but evergreens. You see evergreens are beautiful trees, and rare—give such a beautiful charm to a country residence during the dreary months of winter. The sight, sir, of a green leaf in winter has a *peculiar* fascination; but when we come to look at a country residence beautifully embosomed in the various hues of green in mid winter, and its surroundings and back ground pure white snow, the effect is nobly grand and beautiful. All the finest places in the country now, sir, are planting scarcely any thing but evergreens. One very important reason for this we suppose is, that they are such *rapid growers*.” “Ah! that is important. Well, sir, I will leave the selection to you; but give *large* trees and a good assortment.” “You will want some flowering shrubs, herbaceous plants, and roses, sir?” “To mix up with the evergreens, you mean?” “Yes, sir.” “By-the-by,” said our friend to the “tree man,” “how many years have you been in the business, you know so

many names of trees?" "Nearly two, sir." "Only two?" "That is all, sir; but we soon *learn the names*. I am by trade a 'tailor,' but unfortunate in business. I failed." "Indeed," said our friend, when all at once his "Self-esteem" assumed all its dignity, and twiddling his thumbs behind his back, the one tailor stood contemplating the other for some moments in surprise. "Well, sir, send me the things in good order."

The evergreens, the shrubs, the roses, and herbaceous plants came, and the "little roots" to the "big trees" were buried *down, down*, in the big deep holes, (if Bright had only seen them, *how he would have mourned!*) and well stamped in. Some grew, some died; and what was most vexing, the *large fine trees died first*; but still our friend had good courage. "Self-esteem" kept him on till the trees grew up; but then after they grew up into fine trees his wife and children said *they were of no use to the house*; they did not give the *shade* and *comfort* they so much needed. They waited, and longed, and hoped for years, and now the solace of anticipation had ended in a miserable disappointment. Not a tree under which the children could sit down in the shade; the shrubs and flowers for which they had paid so much money were hid, and overgrown by the large evergreens; and the new orchard, now it has come into bearing, proves to be of such varieties as will not succeed in the neighborhood. The lady of the household affirms that money enough has been uselessly expended to have built them a first-rate dwelling; that the only benefit derived from the capital expended has been to the public; that they have to live in an inconvenient old dwelling, with not a solitary comfort surrounding it; that the farm was in as good condition, if not *better*, when they bought it, than now; that their time has passed away in *expecting*, and realizing comparatively no real enjoyment; and that this was all owing to her husband not taking her advice in obtaining the advice, in the first place, of some practical man conversant with the proper arrangement of new grounds, and the location and judicious arrangement of trees and flowers in *suitable* varieties.

When will two tailors meet again? Stop, "Self-esteem," and think! and think, too, that no one man knows every thing. Some little while ago we passed our friend's dwelling, and by the side of his entrance gate hung a board with the following inscription:

THIS "BEAUTIFUL" PLACE FOR SALE.

[Fox Meadow has here again given us something more than a mere fancy sketch: it is a picture from real life. We know all about that "tailor;" we have seen him scores of times; indeed, he is a sort of ubiquitous personage, and crosses our path almost every time we go abroad, like the phantom of an ugly dream. One can scarcely say any thing too sharp of him. Let us suggest to you, Mr. Meadow, that you continue the subject in two other aspects: 1st. Ignorance; 2d. Pretension, both of which, in common with what you term "Self-esteem," are about equally productive of wasteful expenditure and unsatisfying results, and

all of which are a sad clog to the full development of the beauties, utilities, and real comforts of home. Let us, if possible, make the "golden mean" a shining light that all may see.—ED.]

CULTIVATION OF GRAPES IN CITY YARDS.

BY ONE WHO DOES IT.

It seems to me, Mr. Editor, that your city readers are entitled occasionally to a chance to say something in your columns, and to receive some of the attention so freely given to the more favored portion of the horticultural world.

The fact, that we have but a limited space in which to indulge our love of horticultural operations, should not, we think, preclude us entirely from receiving some notice.

I propose in this article to call the attention of such of your readers as live in cities and large towns, and possessing only a few feet of unpaved ground, to the fact, that the cultivation of the grape should be one of their important pleasures, and that it can be done by all or any one of them in ninety-nine out of every hundred yards in this great city of New York. Perhaps the strongest argument I could use in favor of grape-growing in city lots, would be to illustrate what had been done, instead of drawing conclusions from actual experience, and from them stating what can be done.

The lot that I reside on is twenty-five feet front, by one hundred in depth, sixty feet of which is covered by the house, leaving a yard 25 x 40 feet. Fifteen feet from the house, and running across the lot, is an old-fashioned grape arbor about twelve feet high, with a slanting top connecting it with the roof of the rear piazza.

Over this arbor, running almost wild I may say, are eight Isabella vines, now about twenty-five years old. For the first twenty years of their existence, no attention was given to them, except to prune them at intervals of three or four years, requiring perhaps about two or three hours' time. These vines from the first year they came into bearing have never failed to yield their fruit, and as a general thing, from sixty to one hundred pounds of grapes; and although this is but a fraction of what they might have yielded with proper care and cultivation, yet the result has been so gratifying that the inducement to part with them would have to be of a very extravagant character.

The neighbor adjoining has a yard sixteen feet eight inches wide by about forty feet long, with a similar arbor, and another one at the rear of the lot. His vines came into full bearing this year, and he has a very handsome show of grapes. I will venture to say, that his library, his pictures, or the numerous articles of taste which adorn his house, do not excite as much surprise and interest among his friends as these fine purple bunches of ripening grapes.

There are now two others beyond him, making four grape-growers together, all

of whom can show the best reason in the world why every one in the city should grow grapes.

Within a year I have planted six vines of the new varieties, and intend soon to set out some Delawares to replace the old Isbellas. These new vines I propose to treat entirely on the Mead system, and I believe I can thus get several times the amount of fruit from the same space. Making a liberal provision for a bleaching ground, and reserving a space 16 x 20, on which some day I propose erecting a cold grapery to grow the foreign varities under glass, I find that I shall be able to produce at least two hundred pounds of out-door grapes.in a city lot. If any of your readers doubt my ability to do it, now is the time for them to step forth and prove the contrary. There is a good deal to be written on this subject, and other and abler pens to do it; still I do not apprehend that I shall exhaust my part of it for some time to come. It ought to be followed up until all the appreciative part of this community know how to grow their own grapes.

[Very good indeed, Mr. One-who-does-it; we like your spirit. You and those you represent shall have all the attention you desire. City yards, on the whole, present many facilities for growing grapes to a high degree of excellence; and there are comparatively few of these where a small grapery might not be erected cheaply. We hope the determination you here announce will be adopted by hundreds of others; you shall have such information as will place success beyond peradventure. You seem to have done something, but you can do very much more. Several good beginnings have already been made in New York, which we shall take pleasure in showing you and others. You can not do better than read our Grape articles, especially those on *Soil, Exposure, etc.* The treatment of grapes in city yards, as announced in the beginning of those articles, will be reached in due time; but we shall gladly turn aside to give you special attention. Let us hear from you again.—Ed.]

SHALL THE CULTIVATION OF THE RASPBERRY FOR MARKET BE ABANDONED?

BY BOG MEADOW.

THE question of profit in the cultivation of fruits for market is one which interests many of your readers, and is deserving of serious consideration. The Raspberry is cultivated to a great extent in several of the Hudson River counties, and large supplies of this luscious fruit are sent nightly, during its season, which includes the whole month of July, to the city of New York, to supply the tables of its citizens for the following day. The revulsion in trade in the summer of 1861 has affected the sale of small fruits considerably, and they have been sold under the price of production; this, however, is no criterion for future years, when it may be safely calculated that business will revive, and with it the ability to gratify the palate with this healthy and de-

licious fruit. The writer learns that many persons have become discouraged, and have already destroyed or are about to plow up their Raspberry patches. This seems to be unwise, and is very like burning one's house when it can not be rented. The Raspberry can be cultivated and sent to market for four cents per basket, from distances of 60 and 70 miles from the city, by barges and steamboats plying on the Hudson River; wherever a larger sum can be obtained the profit may be readily estimated. Generally the price ranges from seven to ten cents per pint basket, and at these rates this fruit pays the cultivator well for the care and attention it requires. I know one person who kept an account, two years since, with his acre of Raspberries, charging all expenses of manure, plowing, picking, and marketing, with a clear profit of five hundred and ten dollars for a single year. What more profitable cultivation can one desire? The intention of putting Grapes in the place of the Raspberry patch the year—perhaps one in ten or twenty—when it does not pay, is no excuse for its destruction; rather let the Grapes be put on the adjoining lot, and take the chance that the Raspberry will pay for the three years required to bring the Grape to maturity. My word for it, the man who destroys his Raspberry plantation, because it did not pay in 1861, will regret it but once, and that will be always. The fact that some timid persons have already done so, increases the chances of profit to those who have confidence to hold on.

[We take it for granted that no sensible man will destroy his Raspberry plantation because, in one or two instances, it may have failed to yield him a profit: there have been years when he has realized more than enough to cover any present loss. One might as well destroy his apple-orchard or his vineyard for the same reason. The only Raspberry plantation that we have heard of that might be destroyed, is one that has not produced a berry since its formation, four years ago: the sooner that goes the better; but we would make another to take its place.—Ed.]

RESULTS OF A CHEAP VINYERY.

BY DR. GEO. PEPPER NORRIS, WILMINGTON, DEL.

ACCORDING to promise, I send you the account of the doings of my little vinery, a description of which you saw fit to publish in the HORTICULTURIST about a year since. The building, you will recollect, was constructed on the most economical principles. It is a lean-to, 40 feet long and 13 feet wide, and was planted last spring [1860] with two-year-old vines; the border allowing the roots to pass outside.

The vines made a fine growth last season, and received only moderate attention. A moist atmosphere was endeavored to be kept, an important aid to which was a shallow wooden trough, 18 inches wide, running the entire length of the

here indicated ; your remarks will have a special interest for beginners. We have repeatedly expressed the opinion in these pages, that the great mass of amateurs could easily acquire the knowledge necessary to manage a cold grapery successfully, but you have put the matter stronger than we have. We incline to believe that you unsuspectingly base your conclusions on the supposition that all beginners are as intelligent as yourself, and have acquired the same amount of knowledge in other departments of culture that you have ; but this, however complimentary, is not generally the fact. Very many of them have to begin without any knowledge whatever. While wishing to secure them against disappointment, we have no word of discouragement for them ; on the contrary, we repeat our earnest hope that all who can afford it will put up a grapery, however small it may be : there is nothing in the whole range of horticulture that will yield them more real pleasure and gratification. The necessary knowledge, as we have elsewhere said, can be readily acquired by any person of ordinary intelligence. The reader will find our views pretty fully expressed on page 201 of the last year's volume : he will do well to read them again. They accord in the main with Dr. Norris's experience, as here recorded. The Doctor, however, has been peculiarly fortunate in his freedom from red spider, thrip, and mildew ; and while we most heartily wish him a continuance of such freedom, we hazard nothing in saying that he will secure it only by something a little less than "eternal vigilance." It is better that we should know our enemies from the beginning, especially in times like these. New houses are not much subject to insects and mildew, except as the result of negligence ; but we have never seen an old house, even under the most skillful management, that was not more or less affected by them, and often, too, to the detriment of the crop. However much we may wish and pray that it might be otherwise, we believe this condition of things will continue till the millennium of Horticulture shall have arrived, though the skill and vigilance of man may do much to ameliorate it. We are confident that another year's experience will bring the doctor to our way of thinking.—Ed.]

REMARKS ON THE GENUS MESEMBRYANTHEMUM.

BY DANIEL BARKER, HARTFORD, CONN.

THIS very showy and neglected flowering tribe of plants are not cultivated near as much as their merits demand. The few remarks I am about to make upon them is with a view of bringing them into notice, and growing them in the open air, where they will make a most brilliant show from June until the close of the season.

To have a fine show of bloom, established plants of one or two years' growth is necessary, as small plants make but litte show unless planted very close together. The second week in May in the Eastern and Middle States will be early enough

for planting them out. A situation under a south wall, where the soil is rather rocky than otherwise, or upon rock work having a full south aspect, should be selected; in such a situation they will flower most profusely, producing a most beautiful effect. In planting out, the balls of earth should be kept entire; put them about one foot apart in a compost of fresh sandy loam enriched with well-rotted cow-dung, with a good addition of old lime and coarse sand, well incorporated with the soil. At the time of planting they should have the benefit of a good watering, which in very dry weather should be attended to through the summer. The flowers only expand when the sun is upon them, so that it is quite requisite to have them grown in situations possessing such advantages. Upon the approach of frost the plants should be taken up and re-potted, placing them in the green-house for the winter, during which time they should have but a scanty supply of water, and never become saturated at the roots; just as much as will moisten all the soil in the pot once a week or ten days under ordinary circumstances will be sufficient.

They are very easily raised from cuttings, during the month of October, taken from ripened wood, and planted in sandy soil, and kept in a dry state until they are considerably wilted, when water should be administered quite freely, when they will revive and immediately take root. Afterwards they may be potted in soil as above recommended for planting in the borders, placed in the green-house, where in eighteen months they will make fine plants for planting out in the flower garden.

The Mesembryanthemum, or "Fig Marigold," is a very extensive genus, containing upwards of four hundred species and varieties, and, with the exception of about six from New Zealand and one from Greece, are natives of the Cape of Good Hope. In this country, properly cared for, they would, during the summer months, form one of the most attractive and beautiful objects upon the flower garden, the Verbena not excepted.

[We are glad to see that Mr. Barker has taken up some of our old but too much neglected plants. We hope he will continue the subject, for there are others that have been too much overlooked.—ED.]

ANOTHER DAY'S RIDE.

BY THE EDITOR.

OUR first day's ride left us at night at Poughkeepsie, thoroughly fatigued. We propose to give an account of our second day's run, for that is about the only word that will give a proper idea of the celerity with which we moved. After an early breakfast we called upon Mrs. Thompson, one of our "parishioners." Her place is a little removed from the heart of the city, and is pleasantly located. It is not large, but contains a number of choice things, and is neatly kept,

all the operations being directed or performed by Mrs. Thompson herself. She laid out and superintended the formation of the walks, the planting of the trees and shrubs, and, in short, the whole formation of the grounds, and they would do no discredit to a professional gardener. She had the best bed of Verbenas that we have seen during the season ; she had also a fine bed of Scarlet Geraniums, propagated by her own hand, and of course every one took root ; we should like to see a Scarlet Geranium that would not gladly root when prepared by such delicate hands. We were pleased to see here the new Pinks, the Double Zinnia, and other novelties, presenting, as they did, evidence that the lady was fully up with the progress of the age in such matters. Women have always been famous for making feather-beds ; Mrs. Thompson has demonstrated that she can make, with equal skill, a flower-bed. Women, too (at least some of them,) have been noted for their skill in the use of the broomstick ; Mrs. Thompson has made a new and beautiful application of this peculiar weapon ; all her flower-beds were marked out with a broomstick ! and we are compelled to say, that we have seen others of more pretension not half as well done. We thought our companion looked a little peculiar at this announcement ; we shall not be surprised to have from him an article on the "Geometry of the Broomstick." After examining the flower-beds, the nice little piece of lawn, the fine shrubbery, the Grape-vines, the vegetable garden, etc., and a few moments' rest in the house, we took our departure, very much pleased with what we had seen, and mentally concluding that Mrs. Thompson, as a successful lady-amateur, was a much more useful member of society than a great many others. There is scarcely any thing wanting at her place, except a little grapery, which she expressed a desire to have, and which we trust her husband will soon build for her.

Our next visit was to Mr. Hooker's. This place is shut out from the road in rather an exclusive manner, and the passer-by gets no idea of the beauty within. The place is situated on a hill-side, and presents some very good terracing. The carriage-drive is lined with a neatly-kept Arbor Vitæ hedge. There is a pretty little pond, with a big boat in it, which makes the pond look smaller than it really is. There is also a fine course for the children to exercise on horseback, which we consider a valuable feature of the place. There is a good grapery and green-house, fine trees and shrubbery, some nice lawn, rather too much winding walk, and a pretty little *jet d'eau*. The whole place is well kept, and affords the visitor much gratification.

The sun was now getting up, and the heat, if possible, more intense than on the day preceding. It became necessary, therefore, to map out our work, and nurse our strength as much as possible. We were greatly assisted in this by Mr. Haggerty, on whom we next called. His city place is on the main street, and is the only green spot in it. The nursery is situated some three miles from the city ; it is young, but indicates a judicious beginning, and the impression produced is, that Mr. Haggerty is doing a good business, which we are glad to learn

is the fact. We next drove to Springside, Mr. Haggerty accompanying us. Springside is the country-seat of M. Vassar, Esq., well-known for his wealth and benevolence. It has never been occupied by him, a circumstance which, on many accounts, is very much to be regretted, the absence of a dwelling with its owner producing sad violence to the associations naturally looked for in a place like this. At the entrance a grotesque stone statuette meets the eye; we saw many others in the same style around the superintendent's cottage; and they produced a peculiarly unpleasant impression, which we have been unable to get rid of. We could wish them well out of the way, as having no business amid such scenes as these. We proceeded up the drive to the poultry-yard and deer-park. The birds and animals constitute one of the most interesting features of the place. The poultry-yard and houses are the most extensive and perfect things of the kind that we have seen. We missed Mr. Bement here, but could see a good deal of his handiwork. The pigeons and domestic poultry are in great variety, embracing all the most valuable and beautiful kinds. The deer and their young, some being only three weeks old, had mostly sought shelter from the scorching heat. They were beautiful creatures, but the gazelles were the most beautiful of all. They are small, delicately and gracefully formed, and have eyes of great brilliancy. With curiosity only half satisfied, we passed to the apiary or bee-house, a structure of some size, and well stocked. Leaving this, we passed through the grounds by the gardener's cottage, with those horrid statuettes making faces at us, and continued on through some fine Hemlock hedges and a piece of wood, to the spring which gives name to the place. We noticed in the hedge, that here and there a Hemlock had died out, and been replaced by an Arbor Vitæ: this, of course, produced a bad effect; they ought to be removed even now. In the wood we passed a spot of peculiar wildness, with some fine old moss-covered rocks and stones, which some thoughtless visitor has marred by daubing them with paint. At the spring, which is arched over and well preserved, we quenched our thirst, and hastened along. Soon we came to an open piece of lawn, with a marble fountain, surrounded with vases and flower-beds. The fountain itself is a beautiful work, but the effect would be immensely enhanced if the surroundings were removed. The vases might very well be retained, but the flower-beds, situated as they are, destroy the simple beauty which alone can harmonize with a structure like this. Even beautiful things like flowers have their appropriate place.

But let us hasten on to the graperies and green-house. It was hot enough outside, without going under glass, but we ventured in. The promise was better outside than in. Spider and thrip had mastered the gardener in a moment of neglect, and told their own tale. The seething heat seemed enough to make that tale a short one. It was intolerable, the thermometer being above 170°. We were melting down, and made a rush for the outer air, the perspiration streaming at every pore. It was some time before we could draw a free breath. We would have

undertaken to subdue the whole Southern rebellion in twenty minutes in that house. We thought it might be a good place for Satan to grow grapes in, but not for us. We hastened back through the large vegetable-garden to our carriage, stopping for a moment to take a last look at the gazelles.

Springside is a place of considerable size, with a diversified surface of hill and valley, a good deal of large native wood, some fine introduced trees and shrubs, long drives and walks, and many objects to interest the visitor. It is manifest to every body that a great deal of money has been expended in beautifying it. We were somewhat disappointed, however, in our visit, not altogether because some portions of the grounds were not treated as we could have wished, but we can not forget the peculiar sensation produced on being told that Mr. Vassar does not live on the place during any portion of the year. It seems such a pity that so much natural beauty should in a manner be lost, because of the absence of the owner. The air of hospitality which is naturally looked for can not, of course, be present under such circumstances. This seems to be the great need of Springside.

Our next point was the graperies of Messrs. Kettell and Haggerty. These occupy, we believe, some seven hundred feet of glass. They were built for work, and not ornament, and are consequently plain. They are mostly forcing-houses. In front of one of them is a long frame, heated with water, in which Strawberries are forced. The kinds of Grapes grown are chiefly Black Hamburg and Muscat of Alexandria. The enterprise, thus far, we were informed, has been remunerative, though some time was lost at the beginning in consequence of being deceived in the purchase of vines. We were much pleased with the condition of the vines, and have no doubt the houses will pay as long as they are as well kept as they are at present. Grape-growing is a success here, and the enterprising proprietors deserve it all, and more. Taking a few pounds of Grapes for a "lunch," we pushed on a couple of miles to the Female College, the beneficent enterprise of Mr. Vassar. Just as we arrived there, a little shower came up, which served for a few moments to cool the heated air. Being introduced to the architect and superintendent, and informing him of our haste, he very kindly put up an umbrella, and showed us what had been done. He also laid the plans of the building before us, and gave us every needed explanation, of which we took notes. These must form a separate article. Suffice it to say at present, that the building will be vast in all its proportions, with every accessory that can be desired. The grounds are two hundred acres in extent, are finely located, and command an inexhaustible supply of water. All this land, and all the buildings to be put upon it, with their endowments, are the free-will offering of Mr. Vassar to the cause of female education. Wiser than most of his day and generation, he has determined to see, in his own life-time, that his benevolence is not wasted by improvident hands. He is building a monument that the best of men might be

proud of. Childless himself, thousands shall yet call him father. We trust he may live to see this work fully completed.

Our allotted time was up, and we hastened to the railroad dépôt, where we parted with Mr. Haggerty, with warm thanks for his attentions. Our destination was Fishkill, where we soon arrived; but this article is already so long that we must defer our visits here till our next.

NEW JAPANESE PLANTS.

MR. FORTUNE has recently sent home from Japan a collection of plants, which were shown at the late exhibition of the London Horticultural Society. The following account of them is taken from the "Proceedings of the Royal Horticultural Society," as published in the *Gardener's Chronicle*:

There was on this occasion produced a very interesting and valuable collection of plants, sent from Japan by Mr. R. Fortune. These were exhibited by Mr. Standish, F.R.H.S., to whose care they were confided; and though only a few days removed from on board ship, they were in the most perfect health. With reference to the hardiness of these plants, Mr. Standish stated that the *Sciadopitys verticillata*, all the *Retinosporas*, *Thujopsis dolabrata*, and the different forms of *Osmanthus*, were natives of the hills near Yeddo, and consequently would be remarkably hardy; as a proof of which he mentioned that Mr. Barron had the *Thujopsis* standing in the open ground last winter, without the slightest injury from frost, though the serious amount of destruction among evergreen shrubs and trees, caused by the past winter, around Derby and Nottingham, and indeed almost every where in the middle counties, is well known. This collection of Mr. Fortune's Japanese plants had already been exhibited at the Fête on the 5th of June, and the more important of them had on that occasion received awards. These latter, which were now necessarily passed over as having been already judged by the Society, consisted of the following, namely:

Retinospora obtusa.—A fine evergreen tree of the *Arbor Vitæ* race, forming, according to Siebold, a straight bole 60 to 80 feet high. Of this, a nice little bushy specimen was shown. It had flat, flabellate, dark green spray, which, from the small size of its scale-like foliage, had a good deal of general resemblance to some of the smaller circinate species of *Selaginella*. There were both green-leaved and variegated-leaved forms, the latter being blotched with white; and of these the green-leaved or typical form had received a Silver Banksian Medal, and the variegated-leaved form (*R. obtusa variegata*) a Certificate of Merit.

Retinospora lycopodioides.—Under this provisional name was included, on June 5, in the miscellaneous portion of the group, a rather pretty looking plant, (others of which, shown by Mr. Veitch as *Cryptomeria* sp., had received a Certificate of Merit.) It is apparently a plant of spreading growth, with the branches terete and

leafy all round : distinguishable, therefore, from the *Retinospora* and *Thujopsis*, already mentioned, by a feature analogous to the difference which exists between the true species of *Lycopodium* and those now referred to *Selaginella*. The leaves of this plant are small obtuse green scales, which produce a kind of papillate appearance on the branches.

Retinospora argentea.—Another provisional name for a plant with densely glaucous or silvery spray, which color was especially marked on the lower surface. The plant was not enough developed to show its true character.

Sciadopitys verticillata.—One of the finest Conifers of Japan, or, after Deodar, of all Asia. Mr. Standish exhibited two nice bushy young plants in perfect health, a foot high, showing the aspect presented by the long linear blunt ended foliage, and also its peculiar whorled arrangement. Some of the older leaves on these young specimens measured three inches in length. This had received a Silver Knightian Medal at the exhibition on June 5th.

Thujopsis dolabrata variegata.—This is a fine variegated variety of *Thujopsis dolabrata*, apparently of a lax and spreading habit, the branches flattened and glaucous beneath, very much resembling those of some of the free-growing kinds of *Selaginella*. This variety differed from the ordinary form in having its twigs freely blotched with white, producing a pretty and well-marked variegation. It had obtained a Silver Banksian Medal at the great exhibition already alluded to.

Podocarpus variegatus.—A dense growing little bushy shrub, thickly clothed with short broad ovate shining leaves, variously striped with white. It was a neat looking plant, and had received a Certificate of Merit on June 5th.

Podocarpus microphyllus variegatus.—This had the leaves linear-lanceolate, and sparingly striped.

Taxus longifolia.—A provisional name for a long linear-leaved shrub or tree, which, if hardy, will prove a very handsome plant. This plant was, however, quite small.

Bambusa variegata.—A prettytufted, stripe-leaved Grass, apparently dwarf, and perhaps useful in formal gardens. This had already received a Certificate of Merit.

Aucuba japonica.—Of this species, which is familiar in English gardens in the variegated state, there was included in this fine collection the original or green-leaved state, both male and female plants ; the latter bore orange-colored, oblong-ovate berries, about the size of the pomes of the large-fruited species of *Crataegus*. It had on a previous occasion obtained a Certificate of Merit.

Eurya sp..—This was distinguished as a "broad-leaved Eurya;" it has moderate-sized, elegantly-acuminate, Camellia-like foliage, broadly margined, and more or less blotched inwards with white, and the young foliage comes out stained with a fiery orange-color, which gives the plant a bright, extremely interesting, and showy character. It received a First-class Certificate.

Raphis flabellata variegata.—Of this well-known elegant dwarf Palm, the present form had the leaves striped with more or less white.

Gardenia rudicans fol. *variegatus*.—A beautiful little green-house shrub, with long narrow leaves edged with white, and bearing the well-known fragrant flowers of this species. The plant has been previously exhibited before the Committee by Messrs. Veitch & Son.

Daphne variegata, with the leaves narrowly edged with white. It was distinct from the plants already in cultivation, but was not sufficiently developed.

Elaeagnus japonicus variegatus had the leaves neatly edged with cream-color.

Thea viridis variegata.—The Tea plant, with variegated leaves.

Buxus obcordata variegata.—A very pretty little variegated Box tree, with remarkably short, obtuse, sometimes retuse or obcordate, leaves, of about half an inch in diameter.

Euonymus variegatus.—Something like *E. japonicus*, but with smaller leaves, having a broad central yellowish blotch.

Ilicium variegatum.—A neat-looking plant, probably referrible to *I. anisatum*. It had gray marble leaves, slightly edged with white, and was commended as a pretty variegated shrub.

Osmanthus aquifolius variegatus nanus.—A nice-looking Oleaceous shrub, with neat flat, Holly-like, sharply-toothed or sinuately-spinose leaves, margined and marbled with creamy white. The leaves were small, and the plant of dwarf, twiggy growth. It was awarded a First-class Certificate. There was in the collection an *Osmathus aquifolius variegatus* of larger growth, and with larger and broader leaves, scarcely less effective; and also, the typical green-leaved form of the species.

BROOKLYN HORTICULTURAL SOCIETY.

THE regular Conversational Meeting was held at the Athenæum on Tuesday evening, August 20th. The attendance, especially of ladies, was large, and the display of flowers remarkably good. Mr. Bridgeman, of New York, presented a collection of eleven kinds of Caladium, and about a hundred varieties of Gladioli, making a very brilliant show. Mr. Humphreys, of Brooklyn, presented a fine collection of cut flowers and plants in pots. Mr. Fuller, of Brooklyn, presented choice Gladioli. Mr. Weir, of Bay Ridge, presented cut flowers and bouquets. Messrs. Dailedouze and Zeller presented very choice cut Roses; and several others had cut flowers. Mr. Mead occupied a few moments in explaining the characteristics and beauties of the flowers on the table, and commanding the spirit of the exhibitors in affording those present so much enjoyment. The appointed subject of discussion, "Bulbs and their Culture," was then taken up, and debated by Messrs. Mead, Bridgeman, Fuller, Pardee, Brophy, and others. We have unfortunately lost our notes of this discussion. We could give the substance of our own remarks, but prefer not to do so while unable to present the

remarks of others. Suffice it to say, that the speakers gave those present a good deal of valuable information on the subject of bulbs and their cultivation, and were listened to attentively. The whole proceedings were very interesting. The subject of "The Grape, and its Culture," was set apart for the next meeting, and the Society adjourned.

The last Conversational Meeting was held at the Athenaeum on Tuesday evening, September 3d. The weather was very stormy, which prevented the presence of the ladies; but the male attendance was good, and among them some of our most noted horticulturists. We noticed Dr. Grant of Iona, Dr. Houghton of Philadelphia, Mr. Barnard of Boston, Mr. Fitch of the *Agriculturist*, Mr. Pardee, and many others. As usual, there were a number of fine plants and flowers on the table.

Mr. Bridgeman, of New York, exhibited finely-grown grape vines in pots, in excellent condition for a crop next season. He had also 65 varieties of choice Gladioli, to which he has devoted much attention. Mr. Burgess, of East New York, exhibited a seedling Dahlia, a seedling Rose, and a seedling Phlox, all of them meritorious. He is noted as a seedling raiser. He also showed Daphne cneorum, which we again commend to every body. Mr. Messelberg, gardener to James Barnes, Esq., of Williamsburgh, exhibited fine Asters and some superb Balsams. Mr. Chorlton, of New Brighton, sent in a basket of large and handsome Pears, and flowers of the Peristeria alata. Mr. Humphries exhibited two baskets of flowers, more tasteful than usual, made in accordance with our suggestions at the last meeting. One of the members whose name we forgot, placed on the table a Stapelia in bloom. This singular flower was new to many, and excited a good deal of attention.

The following account of what was said has been furnished by a friend.

A general lecture by Mr. Mead on the subjects before him on the table, in which he pointed out the peculiarities of different flowers, and in what consisted their particular beauties, improvements, and defects, was listened to with marked attention, and opened the way for the general introduction of the subject of the evening, "THE CULTIVATION OF THE GRAPE." This Mr. Mead proposed should be taken up in a systematic manner, commencing with the preparation of the soil, manner and time of planting, varieties, pruning, etc. He alluded to the great importance of its culture, and the necessity of accurate information in regard to it, stating the facility with which ladies might engage in its culture, and quoting an example of a lady in Poughkeepsie, who, besides having one of the best managed and most tastefully arranged flower gardens on the Hudson, has found time to grow successfully many of the finer varieties of out-door grapes. Mr. Mead then introduced Dr. Grant, of Iona. Dr. Grant wished to postpone his remarks to a future occasion, having come there to get information, and begged to be excused. Dr. Houghton, of Philadelphia, then being called on, spoke of the culture of the Vine in the neighborhood of Philadelphia, giving a very discouraging account of his ex-

periments with out-door vines. The Catawba, he said, can not be ripened except in rare instances, and they are not able to grow the Isabella, so that it becomes either a pleasant or healthful fruit to eat. Had an acre and a half of vineyard now three years old, and no fruit; would be glad to know that the native grapes could be grown with profit, and would take a great deal of trouble to visit any one in the neighborhood of Philadelphia who is growing out-door grapes successfully. His objections, he said, were based upon practical experience. He had not yet given the Delaware, Diana, or others of the new varieties, a fair trial. The Delaware he considered too small. The foreign varieties he had cultivated under glass with very great success, and considered them superior to the native grape. They were grapes that any one might eat without injury. In city yards the native grapes are grown successfully, and are considered desirable by those who are not in the habit of eating Black Hamburgs and Muscats of Alexandria. He said a good grapery can be built and planted for \$700, 15 feet wide and 100 feet long, and that those present could estimate how much money would be required to prepare an acre of ground for a vineyard. In a grapery one has less enemies to contend with. Early frost, the black beetle, mildew, etc., could be avoided under glass. He wished to know, before sitting down, if any one could tell him the best time for transplanting Diana vines three years old, and if it would do before the leaves fall, quoting the practice of European gardeners of raising their vines, renewing their borders, and returning them without draw-back, the fruit being full and fine the following year.

Mr. Mead stated, in reply to Dr. Houghton, that before the leaves fall would be the very worst time for transplanting any thing, and that what might be done safely in the moist climate of England and the continent, would be fatal in our dry climate. In regard to Grapes, he did not think it fair to draw comparisons between those that had been perfected by centuries of cultivation and those that had only been known 30 to 50 years; he thought that when our native varieties had been cultivated as long as those of Europe, they would be equally fine. He stated that the rot had affected the Catawba to such an extent that it was not now deemed a safe grape to cultivate. The foreign vine can not be grown in the open air, and the construction of glass houses is not within the means of every one; the popular demand is for an out-door grape, and he believed want of success with Dr. Houghton was to some extent due to the varieties he named, but more particularly to his manner of cultivation. That grapes can be grown in this country, and profitably, has long since been settled beyond all question. In regard to the size of the Delaware, to which Dr. Houghton objected, Mr. Mead stated, that we do not yet know its capabilities; it was increasing in size every year. He had seen bunches this season that would weigh half a pound each, and a few that would weigh three quarters of a pound, with berries nearly or quite as large as the Diana. He had no doubt that it was one of the most productive grapes in cultivation; it only wanted time and age to recover from the effects of too persis-

tent propagation. He stated further, that if the Doctor would take the same care and trouble in preparing his native vines that he took with his foreign vines, he would get fruit from them just as soon.

Mr. Pardee said that he had never known the Catawbas to fail a single year grown as he grows them. Stated that he had taken a premium for Catawba for six successive years at one of our prominent agricultural fairs; had visited vineyards for which \$800 per acre had been offered for the produce of a single year. He thought that Dr. Houghton had painted too dark a picture.

Mr. Brophy thought that grapes under glass were more profitable than those grown in the open air, and considered the foreign grape as most superior; thought there was nothing like them for the dessert or the sick room, and that they could be grown under glass in any of our city yards.

Mr. Bridgeman remarked that the culture of the foreign vine could only be attempted by the few, while the native vine could be cultivated by every laboring man.

Mr. Mead took up one of Mr. Bridgeman's pot plants, and explained how he stopped vines to produce a larger cane, after which the society adjourned.

This closed the most interesting meeting of the season. The fall exhibition taking place from the 18th to the 20th of September, the next conversational meeting will be held the first Tuesday evening in October, when the subject of Grape growing will be continued.

CAMELLIA A. J. DOWNING.

(See *Frontispiece.*)

In our description of the Camellia *Spiralis rubra* we stated that we had a plate of another of Mr. Becar's seedlings, to which he had given the name of Mr. Downing. Mr. Becar's purpose was to sell the plants by subscription, and devote the proceeds to the erection of a monument to Mr. Downing's memory. Mr. Becar unfortunately died before this praiseworthy purpose was fulfilled, and the project died with him. This, undoubtedly, is by far the best of Mr. Becar's seedlings, and one of the very finest Camellias in cultivation. The flower is large and full; the form is beautiful; and the color of a rich glowing rose, exquisitely shaded off to a silvery rose at the edge of the petals, this shading constituting a feature whereby this Camellia may be distinguished from others of similar color. The foliage and habit are good. It is worthy of a place in the choicest collections. Our drawing was made by a young son of Mr. Chorlton, of Staten Island, and is very creditable to him. He possesses a talent for drawing which he should cultivate assiduously. Our colorist, we find, has been unable to show the proper tint, in consequence of the blending of the printer's ink.

LOW TREES VERSUS HIGH ONES.

BY WILLIAM BACON, RICHMOND, MASS.

IN years gone by, as the remaining trees in old orchards show, there was an almost universal practice of throwing the tree-tops high into the air; first, by allowing the trunks to arise some six or seven feet before they throw out branches; and, second, by pruning the branches near the trunk, leaving merely a tuft of limbs at the extremities of these naked arms. These outside tree-heads, formed on branches that had the appearance of *artificial* trees thrown out from the trunk, of course receded further from the main body of the tree each year.

The disadvantages of this way of growing trees are, their greater liability to be shaken and broken by high winds; the longer the lever, the greater the power in raising heavy bodies; the further the heavy tree-top is removed from the earth, the more power the winds will exert to overturn a tree. Then the branches are more liable to be broken by the weight of top being far removed from the trunk, or, if not directly broken, they are severely twisted, and thus made unhealthy, which, in due time, insures their decay.

The fruit on such trees is much more liable to be prematurely blown off by high winds; they are gathered with much more difficulty when mature. If the tree is shaken, as is still the custom with many, it is sadly bruised by the fall from these high tree-tops; and if picked off, the danger to life and limb in the operation is increased in a greater ratio than the increasing distance from the ground.

But there is yet another objection to this method of tree-forming, fully equal to, if not greater than, all others. Sap is the life of the tree, and the excess of sap goes to perfect the fruit. The longer the trunk and branches of the tree, the more of this must go to support the wood; the more the small branches are thrown into tufts at the extremities of large limbs, the fewer will be the leaves to elaborate sap for the nourishment of the tree, and perfection of fruit; consequently, a feeble tree and small and inferior fruit will, in the end, be the result of the miserable system.

By the above noted system of tree-growing, they are more exposed to the ravages of insects. The more bare wood, and greater exposure of it to atmospheric changes, the feebler the tree, and more subject to attacks, not only of the hosts of animal predators that feast most greedily upon such trees; lichens gather on them more readily, and feed on their very vitals. Any one must know that these evils can not be so readily contended with on a high, ill-shapen tree as when near the surface; so that, besides the increased amount of danger from the evils alluded to, the difficulty of obviating them is so much increased that, in a sort of indolent discouragement, they are neglected, and old, moss-covered, worm-webbed,

insect-bored trees in a few years take the place of what may now be a young, thrifty, and promising orchard.

When Nature raises trees, she does it on her own economical plan—one best calculated to give health and long life to her subject. In the forest we see trees shoot up their tall, mast-like trunks with a few branches at their extremities. Such trees are protected by surrounding trees while the forest remains; but remove the burden of timber, and how the remaining trees are rocked and shaken by the wind! How often their beautiful heads are decapitated by the raging storm! Who ever saw such trees on the border of a wood lot, or standing in isolated positions about fields? Such trees, if on the border of woodlands, throw out branches near the ground, to shield the body of the tree from storms and sunbeams. And the specimen of unrivalled symmetry in the field—how low its branches, and how beautifully it throws its long arms abroad! Yet these arms are not the naked ones that invite disease, but all along their length they throw out little branches, from each of which a clump of leaves appear to aid in furnishing the tree with healthy life-blood. If these branches become too numerous, or if the weaker interfere with the stronger, nature prunes and casts off what is superfluous.

But to our fruit-trees. The best specimen of an Apple-tree we ever saw made its head so near the ground that a person can without difficulty step into the lower branches, and these branches spread so low that the fruit can be gathered without difficulty by a person standing on the ground. They are long branches, and the top of the tree forms a symmetrical hemisphere. Neither the axe nor the saw has been accessory to forming that tree-head. The hand and the pruning-knife directed the first starting of these branches, and here they stopped, unless two combatant branches so interfered with each other's rights that one of them must be removed. This tree-top is so dense and so wide, that the hot midsummer sun can not send his fiery rays to scorch the unprotected part of the tree. They fall upon its leafy head, and the warm atmosphere is diffused along the trunk and among the branches. No insects have ever disturbed the tree, unless it were some straggling worm that so far forgot the rules of propriety and honor as to commence its web among its branches. And, what is far better, it has never failed of a crop since it commenced bearing.

Low trees come into leaf, flower, etc., earlier than tall ones. A Pear-tree seven feet high had branches within a foot of the surface of the ground. The lowest branches were in full leaf before the buds on the top of the tree had developed the color of the leaf. And a Plum-tree, with branches near the ground, gave blossoms on the lower branches from a week to ten days earlier than they appeared in the upper part of the tree. Let the difference continue in the same ratio through the season, and many of our fruits would be raised in much higher perfection than they now are.

We have no doubt but many of our old orchards have been injured more by

injudicious over-pruning than in any other way. Tree-pruning was almost a mania. It must be done every spring. This lower limb must be taken off, and that branch pruned as far out as the operator dared to venture, and could reach with the destructive axe. Such a system of tree-torturing and tree-mutilating could not be otherwise than destructive.

[Here are important truths, forcibly put. There is one point that we should have made stronger, and that is, that low-branched trees come into bearing at an earlier age than others. We think there can be no doubt at all about this; it ought, therefore, in connection with other manifest advantages, to determine our treatment of fruit-trees. We commend Mr. Bacon's remarks to serious consideration.—Ed.]

HOW TO MAKE ACCURATE OUTLINES OF FRUIT.

BY COGNOSCO.

Now that the pears and apples of the later and more valuable varieties are ripening, I wish to suggest to all cultivators desiring to preserve of accurate outlines of their fruit for future reference or comparison, a plan, although by no means new, yet not very generally known or practiced.

In the first place, have prepared a neat book of clean white paper; drawing paper would be preferable, if you should wish to have them shaded at a future time; but fair writing paper not ruled will answer a good purpose. Now take your pear, and divide it equally through the greatest diameter, taking care, also, to divide the stem with it; then lay it flat upon a loose sheet of glazed paper, and with a black lead pencil draw its outline by running it around the pear. You will then have an accurate representation, but the juice of the fruit has soiled the paper; and although your outline is perfect, yet there is nothing neat about it. To obviate this difficulty, it is necessary to transfer it from the loose sheet of paper to the book. It is done in this manner: remove the juice by soaking it up with blotting paper before it has had time to strike through the glazing, and dampen the body of the paper; then take the original outline, and lay it on the book in the place on which you wish to have it transferred; place between the two a sheet of transfer paper, and by passing again over the outline with a fine point you will have an exact duplicate, neat and clean, upon your book. The core, seed vessels, etc., can be transferred in the same manner, by laying a piece of tracing paper upon the flat side of the cut fruit, and with a fine brush tracing around them—and then by the former process transferring it to the outline already prepared, the transparent tracing paper enabling one to fit each outline to the other. When one becomes a little expert at it, the whole tracing may be made from the fruit, but it would be better to stretch the tracing paper on a frame, then place it as near the

fruit as possible without touching it, and make the tracing with a fine brush and India ink, this requiring no pressure on the paper, as in using a lead pencil. We have seen outlines made from the fruit on common brown paper; this readily absorbs the juice, and in drying, the outline becomes somewhat distorted, and is always more or less discolored. Exterior peculiarities may be added with a lead pencil, and weight, color, and time of ripening, in fact, the whole history, should be carefully written out beneath. Those who are experimenting in fruit culture should devote several pages to each variety, that they may thus be able to compare the results of different years.

It must be borne in mind that a sectional outline thus made appears less in size than the real fruit, although in reality it is the exact size. When it is desirable to show the apparent size of the original, a finished drawing should be made from the same outline. Shadow gives the appearance of rotundity, and thus apparently increases the size; this last is, however, artistic, while the other can be done by any one possessing a medium amount of intelligence.

Duplicate outlines can be made on tracing paper, and transferred to letter sheets, if one should wish to mail them to friends.

Transfer paper comes in a package of four sheets, green, blue, black, and red, or four sheets of a single color, for twenty-five cents, and may be had at almost any stationer's. Tracing paper is sold at six cents a sheet. Fifty cents' worth of the two will last any one almost a lifetime.

Leaves of almost every description can be beautifully transferred to the most delicate fibre, by laying them on the green transfer paper, and rubbing them with an ivory paper folder, so that each part comes in contact with the paper; then place them on clean white paper, and repeat the same process. It is often desirable to preserve fac-similes of the leaves of fruit trees, grape vines, etc.

[The above will, we think, be interesting to a great many of our readers. Outline drawings of fruit are usually made directly in the book, without the use of transfer paper; but this soils the book, however carefully done. Where transfer paper can not be had, let the specimen dry for a few moments after being cut, and greater neatness will be obtained. Where it is intended to shade the drawing, two outlines must be transferred to the book, one with the core and the other without; it is only the latter that can be shaded. There should also be an outline of the fruit in its least diameter. There is nothing, however, equal to a good *portrait* of fruit; but there is not half a dozen persons in the whole country who can make a good one.—Ed.]



TSCHUODY'S GRAFT, OR HERBACEOUS GRAFTING.

BY CHARLES MORE, YORKVILLE, N. Y.

THIS mode of grafting (the *greffe herbacée* of the French) was known and practiced in the time of the *renaissance*; it was then forgotten or lost, and afterward, in the beginning of the present century, rediscovered by Baron Tschuody, and by him made public.

This mode of grafting belongs to the section of cleft grafting, the only difference between this and cleft grafting consisting in the one being performed on hard wood and the other on young or soft wood. In the spring, as soon as the young shoots have made about two-thirds of their growth, and can be broken like a piece of glass, is the time to perform the operation. The top of the plant to be grafted must be broken, not cut; this indicates just where the part of the shoot is fit to be grafted. In alternate leafed plants, the stock should be split about one inch below the third leaf; the graft must be cut in the shape of a wedge, and the top of the cut put just opposite the second leaf; and tied carefully with a piece of bast matting. A cone of paper is then put over the whole, to protect the graft from the sun and rain. If the plants operated on are in pots, it will be best to put them in a frame, well sheltered from the sun. In about two weeks the papers should be opened at the top, and from time to time light and air admitted, to harden them off gradually. The papers may be taken away immediately after the ligatures are loosened, and the two portions of the stock above the graft severed at once.

In this way Tomatoes have been grafted upon Potatoes, Melons upon Cucumbers, Globe Artichoke upon *Carduus lanceolatus*, etc. I have myself grafted many thousands of hardy Azaleas upon *Azalea Pontica* with perfect success. All the Pines can be grafted in this way with wonderful success. M. Boisdivers, late conservateur of the forest of Fontainebleau, had many thousand Pine trees grafted every year in this way. The soil of the forest is a very poor one, consisting in great part of white sand, in which only a few dwarf trees and heath grow. The only kind of pine that will succeed in such a place is the *Pinus sylvestris*; all the other kinds, more valuable for their timber, can not be raised, in consequence of the aridity of the soil. Attempts made by him to graft the more useful kinds on the *Pinus sylvestris* were eminently successful.

[The above, though not new to some of our readers, presents some interesting facts. The grafting of herbaceous plants would afford the amateur both instruction and amusement; and the grafting of the young shoots of the Pine, etc., might no doubt be more generally practiced by nurserymen and others with decided advantage. What is here said of the Tomato, Azalea, etc., will apply equally to the *Pelargonium* and similar plants.—ED.]

A CATERPILLAR PLAGUE.—The following is taken from the *Free Press* of London, Canada West: "Allow me to note that Tuesday and Wednesday of this week was a continuation of heavy rains and murky weather, impeding the important operations of the husbandman. On Thursday it cleared off, and Mr. Butt discovered, on one of his farms in Southwold, millions (or innumerable even on a square rod) of caterpillars on his Barley field. To-day I accompanied him over two fields of Barley, one of Oats, and two of spring Wheat, which are actually alive on the ground, stem, straw, and a few remaining heads; they are devouring all before them, cutting the leaves and heads off every stalk they climb. I never saw so much destruction in a short period, not even excepting the ants in the West India islands, of which I often witnessed sad havoc in a few hours. They are traveling in myriads at 11 o'clock this morning, having finished a Barley field, with an adjoining field of spring Wheat. They eat all the grass before them, and bridge drains full of water on fallen stalks. Three or four men were of no use while I looked on. I left them with a reaping-machine, cutting a swath around each field, and plowing it up, then sowing quick-lime on top, to try to arrest their onward progress of rapacity and ruin. The Barley field that would have yielded 60 bushels to the acre, by appearance of the straw, now won't average over 15, allowing that no more damage will be done. I just hear that another farmer has lost his field, and that they exist on other farms in the southern part of the country, destroying spring Wheat, Barley, and Oats."

[We have no doubt that the caterpillar here described is the "army-worm," which this year has made its appearance in large numbers in portions of the country where we should least have expected it; for instance, on Long Island. It has thus far, we believe, been confined to the north side of the island. Mr. Elbert Bogart informs us that it has been very destructive at a place called Cedar Swamp, between Roslyn and Oyster Bay. Its course at this place was northward, and a few miles would take it into the Sound. It would be desirable to know where else they have been seen in the vicinity of New York.—ED.]



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the Editors and Proprietors, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

MR. HOVEY AND THE BONTE DE ST. JULIEN STRAWBERRY.—Mr. Hovey, in the September number of his magazine, alludes to our remarks about the Bonté de St. Julien Strawberry in a manner which we are not disposed to leave unnoticed. His allusion to our unfortunate deafness is unbecoming, to say the least of it; it has nothing whatever to do with the subject, and is much too deep an affliction to be made the object of a public jest. We are fain to believe that it escaped him in a moment of thoughtlessness. Now let us examine Mr. Hovey's criticism for a moment. It must be evident to every body that our object was simply to ascertain whether the Bonté de St. Julien was as productive with others as it was in the particular case alluded to, and the fact of its having been introduced two years ago, or exhibited in Boston, or whether we had seen the plants elsewhere, had nothing to do with our purpose. The point we aimed at is plain enough. We meant to have said, "*in fruit* for the first time," but that matters but little. We will go a little into detail in order that Mr. Hovey may not misunderstand us. His own books will show that the particular plants referred to, with others, were bought of himself about two years ago, since which time they have been pretty constantly under our eye. They were laid in without preparation, and made their runners, but produced only a little fruit; indeed, they were not expected to fruit, and we could not in fairness have said they were in fruit, for the purpose we had in view. Last fall they were put in a prepared border, and produced the results recorded. The simple fact is, Mr. Hovey, we saw and ate the fruit some three times last season, (1860,) besides this, but did not see the plants at the time. We were offered plants of it last fall in Philadelphia, but declined because we had as many as we wanted. We had seen it advertised by yourself, Mr. Prince, &c.; and had read descriptions of it in foreign journals; but all these things were quite beside our object in asking the question we did, and we should not in the least allude to them if we had to repeat it. What we want to know is, whether any of our readers who have grown this Strawberry, have found it to be as productive as in the particular instance referred to. Mr. Hovey concludes as follows: "Only think of wishing 'to hear more' about a

Strawberry introduced and widely disseminated for two years." Sure enough, only think of it! Why, it's dreadful! We ought to consider a Strawberry old, and worn out, and good for nothing but to be forgotten at the advanced age of *two years*; but somehow or other we can't do it here in New York. We have Strawberries here considerably older than that which we still consider new. But Mr. Hovey only means this as a good joke; for in his last number he advertises this very Strawberry as a *new variety*, so that on this point there is, after all, no difference between us. But whatever may be the case in Boston and Massachusetts, we know that in New York, Connecticut, New Jersey, Pennsylvania, and a great many other states, the Bonté de St. Julien is not yet widely disseminated; on the contrary, it is comparatively little disseminated, even with the plants sent out this fall. If it has become "widely disseminated" in two years from the time of its announcement, it has accomplished a pomological feat never before even attempted by any fruit yet introduced to public notice.

SEEDLING DAHLIAS.—During the two past seasons we have taken a good deal of interest in watching Mr. Richardson's seedling Dahlias, and with no ordinary gratification. His success has been very marked. Among quite a number that would any where be considered good, we have selected four, as being distinct and very beautiful. One, heretofore named *Mrs. Richardson*, is a beautifully-shaded white, of large size, beautiful form, good substance, cup-petaled, and very constant. Being a very handsome show-flower, *Mrs. Richardson* will become popular among amateurs, and all others who prize a good thing. Another, now duly christened *Emma Cheney*, is a Dahlia of remarkable merit, which we esteem not only the best of Mr. Richardson's seedlings, but one of the very finest Dahlias we have ever seen. *Emma* is of a beautifully round, well-developed form, smooth outline, good substance, pure, bright rosy red, very constant, and in all respects faultless. We shall, by-and-by, present this Dahlia as a frontispiece. Our conviction is, that *Emma* will take her place as a general favorite. The other two selected, one of which is a distinct fawn-color, will be named hereafter.

MR. HOPE'S DELAWARE GRAPES.—Some allusion was made last season to the Delaware vines of Geo. T. Hope, Esq., of Bay Ridge, and it was predicted by some of his friends that he would have but a small crop this season in consequence of letting his vines overbear; but he has even more fruit than last year. He has sent us some specimens, wood and all, in his own words, "just to show you what Delawares can do when they try." They have done nobly. There are three bunches to the shoot, large, handsome, and thoroughly ripe; they weigh nearly half a pound each, and are a fair sample of hundreds of others. The more we see of the Delaware, the more we are convinced that it is by far the most valuable grape we have. Mr. Hope concludes thus: "I shall be compelled to hold *lona* in *grapeful remembrance*." We trust scores of others may be able to say the same, and do it *Hopefully*.

PRICE OF GRAPE VINES.—We are glad to see, from the few new Catalogues that have reached us, that the price of vines has been put down to something like a war figure. We are glad to see it, because otherwise vineyard planting would receive a serious check. People can not afford to pay now the prices they paid a year ago, for vines or any thing else. We notice in Dr. Grant's new Catalogue that the Delaware is priced at 50 cents to a dollar each, and in quantity much less. Other kinds are put at correspondingly low prices. A good vine of any kind worth growing is not dear at a dollar; we doubt, indeed, whether a first-rate vine can be grown for less by any body. We suppose that prices generally will be low this fall, nurserymen usually not being behind others in adapting themselves to circumstances. Now, then, will be the time to buy—for those who have the money.

FAIR OF THE STATE AGRICULTURAL SOCIETY.—This is now being held at Watertown, (Sept. 17, 18, and 19,) and is said to be very fine. We regret that our engagements at Brooklyn and elsewhere prevent us from going. We shall endeavor to get some of the particulars for our next.

QUEENS Co. AGRICULTURAL SOCIETY.—The time for holding the annual Fair has been changed. It will be held at Flushing on Thursday, the third of October.

Will "*Aestivalis*" please send us his post-office address?

BROOKLYN HORTICULTURAL SOCIETY—FALL EXHIBITION.—This took place at the Brooklyn Academy of Music, on the 18th, 19th, and 20th of September. It was seriously thought, at one time, of suspending the fall exhibition; but we esteem it a fortunate circumstance that this purpose was abandoned; otherwise, we should have been deprived of the pleasure of witnessing the most satisfactory exhibition that the Society has yet held. The exhibition room, though a very suitable one in most respects, is quite too small. All the plants could not be got on the table, and the mass of visitors were so crowded together as to interfere seriously with sight-seeing and enjoyment. This drawback, we are told, will not occur again. The lateness of the hour will prevent us from giving such an extended notice as we could wish. Mr. Menand, as usual, was present with his fine collection, embracing Caladiums, Begonias, Marantas, Crotons, Aralias, Dracænas, Protea *cyanoides* (in bloom), Ferns, Bananas, Pavetta *borpionica*, Grevillea *longifolia*, and many others, all very carefully grown. Mr. Bridgeman, of Astoria, loomed up unexpectedly strong, and in collections made a very decided demonstration; for example, he had 13 kinds of Begonia, 15 of Caladium, 4 of Araucaria, 4 of Croton, 4 of Dracæna, 11 of Maranta, 4 of Pteris, and 10 of Selaginella, Solanum *quitense* (a fine plant), Vallota *purpurea* (in flower), Ferns, and a large number of other plants in pots; also, a splendid show of Gladioli. We will just say here, that the Gladiolus, as at present improved, is one of the very finest of all show flowers. Parsons & Co., of Flushing, made a very large

and fine display of pot-plants, among them some new and beautiful things, one of the most noteworthy, and one of the finest plants in the room, being the *Alocasia metallica*, with large, dark, metallic-looking leaves of great lustre. We also noticed in this collection *Cyanophyllum magnificum*, three species of *Cissus*, *Pavetta borbonica*, *Pteris argyrea* and tri-color, *Caladiums*, *Begonias*, *Marantas*, *Ferns*, and many others. From Isaac Buchanan & Son, of Astoria, a miscellaneous collection of plants, such as *Caladiums*, *Begonias*, *Ferns*, *Bilbergias* (in bloom), *Alocasia metallica*, a number of *Orchids* (*Oncidium papillio* and others being in flower), *Marantas*, and others. Mr. Humphreys, of Brooklyn, a collection of plants, such as *Begonias*, *Caladiums*, *Ferns*, *Sago Palm*, *Screw Pine*, and other pot plants, besides some very pretty *Wardian cases*. Mr. Weir, of Bay Ridge, exhibited *Caladiums*, *Begonias*, *Marantas*, and other pot plants; but after leaving the large collections it was difficult to say to whom the rest belonged, owing to the defective labeling. Mr. Hamlyn sent, as usual, a fine collection, consisting of *Begonias*, *Caladiums*, *Ferns*, etc., *Caladium Chantinii* having been grown in the open air. There were also several other smaller lots from other parties, their names not appearing.

In Cut Flowers, Mr. David Clarke, of New York, made the best show, followed closely by Mr. Messelberg of Brooklyn. There were also cut flowers from Mr. Burgess, Mr. Brunner, Mr. Weir, and others. In Roses, Dailedouze and Zeller led off with a splendid display, which was kept fresh during the exhibition. They not only have a very choice collection of Roses, but they show a spirit as exhibitors which we should be glad to see more common. Mr. Clark, of New York, Mr. Burgess, of Brooklyn, and others, also had fine stands of Roses. Mr. Burgess made a large and fine display of Dahlias, his seedling, Mrs. Burgess, being one of the best. Mr. Brunner, of Llewellyn Park, also made a fine show. Mr. Pell, of the New York Orphan Asylum, likewise presented a large table of Dahlias; and there were some small collections. The display of Bouquets and Baskets was a very pretty feature, the exhibitors being Messrs. James Mallen, Andrew Bridgeman, James Weir (father and son), Walter Park, Isaac Cummins, Philip Zeh, and others. The judges this year adopted promiscuously arranged Bouquets; and provision being made for only one kind, Mr. Park was left out; but he has taken so many prizes that he can very well afford to let others have a chance. An ornamental stand of flowers by Mr. Messelberg was one of the prettiest objects in the room. There was also a pretty ornamental design, but by whom made we do not know. Mr. Peter Henderson, of Jersey City, made a large and fine show of Verbenas, and among them some fine seedlings. Mr. Marc, of Astoria, exhibited a collection of very choice Gladioli. Collections of vegetables, and good ones, were exhibited by Messrs. Perry, Barnes, Prosser, etc. Mr. Cockerill, gardener to B. C. Townsend, Esq., exhibited the new upright Tomato, finely fruited. Mr. Cyphor, of Tarrytown, exhibited a beautiful rustic cottage, made of scales from the cone of the Norway Spruce. It was a remarkably fine

piece of workmanship. Mr. Marin, an amateur, presented a couple of hanging baskets, which for taste and workmanship would have done credit to older hands. There were also japanned flower pots and hanging baskets from Mr. Eberhardt, of New York.

Among Fruits, Messrs. Ellwanger & Barry were the largest exhibitors, their display consisting of Apples and Pears. They had 67 varieties of the former and 135 of the latter. They embraced the old kinds, and some not yet much known. The display was a fine one. The next largest collection was that of Mr. Marc, of Astoria. The specimens had been carefully selected, and were very fine. Mr. Marc has been noted as a Rose grower, but he is now making Pears a specialty, and we noticed in his collection several newly imported varieties, Beurré Mouxion being one of the best. Mr. Quin, gardener to Professor Mapes, competed successfully for the best 12 varieties of Pears. The specimens and kinds were remarkably good. Mr. Weir, of Bay Ridge, also had a choice collection of Pears. There were smaller collections from Mr. Grant, of Astoria, Mr. Tanner, of Brooklyn, Mrs. De Gray, of Bedford, and others. Peaches and Plums were shown by Mr. Tanner and Mr. Huggins, and a plate of Peaches by Miss Degrauw, of Brooklyn. The competition in Native Grapes was larger than on former occasions. Mr. Brocksbank, of Hudson, and Dr. Fowler, of Fishkill, exhibited in quantity, and made a fine show. Mr. Jennison, superintendent for Mr. Mace, of Newburgh, exhibited the Delaware, Concord, and Hartford Prolific, the Delaware being in great perfection. Some of the bunches weighed half a pound, and berries were measured three quarters of an inch in *diameter*. He also showed a cane of the Delaware, loaded with beautiful bunches. Mr. Tanner had fine Isabellas and Catawbas, thoroughly ripe. Mr. Huggins also exhibited the same. Mr. Egan, of Staten Island, exhibited Isabellas and Catawbas of very large size, but not quite ripe. Mr. Cowan showed Isabellas grown under glass. Mr. Wm. A. Woodward exhibited his Seedling, resembling the Isabella. Dr. Grant, of Iona, exhibited a seedling with a flavor resembling the Black Hamburg. Mr. Couzens, of Dobb's Ferry, exhibited a seedling resembling the Isabella. There were several smaller lots of native grapes, the Delaware taking the lead of them all. Mr. Weir, of Bay Ridge, exhibited a bunch each of the Golden Hamburg, Muscat Hamburg, and Bowood Muscat, the last two being very much the best grapes. We may close this list with a splendid Fruit Basket from Mr. Reddy, gardener to Mrs. Packer.

Of foreign Grapes, Mr. McMillan, of Throgg's Neck, and Mr. Cowan of Glen Cove, exhibited in the large class. In the next class were Mr. Egan of Staten Island, and Mr. Cowan of Glen Cove, besides exhibitors of smaller collections. The bunches were of good size, some of them quite large, but not all as well colored as we like to see them.

Messrs. Aubrey & Souchet, of New Jersey, had a large collection of Asters in

pots. They were all good, many of them choice, and well grown. They were very much admired.

The following is a list of the awards made by the Judges :

FRUIT.—Best 6 bunches of Grapes (foreign), James McMillan, gardener to Francis Morris, Esq. Throggs' Neck, Westchester county, N. Y. 2d best, James Cowan, gardener to the Burton estate, Glen Cove, L. I. Best 3 bunches of Grapes (foreign), James Cowan, Glen Cove, L. I. 2d best, John Egan, gardener to J. F. Roeck, Esq., Staten Island. Best 2 bunches of White Grapes (foreign), James Cowan. Best 2 bunches of Black Grapes (foreign), James Cowan. 2d best, John Egan. Best 6 bunches of native Grapes, B. H. Mace, Newburgh, N. Y. Best 3 bunches of native Grapes, Henry Tanner, gardener to J. S. T. Stranahan, Esq., Brooklyn, L. I. 2d best, Wm. Huggins, gardener to Charles Stanton, Esq., Brooklyn, L. I. Best collection of native Grapes, Wm. Brocksbank, Hudson, N. Y. 2d best, Theodore Fowler, Fishkill, N. Y. Best 12 varieties of Pears, P. T. Quinn, Newark, N. J. 2d best, James Weir, Bay Ridge, L. I. Best 6 varieties of Pears, Wm. Grant, gardener to S. D. Bradford, Esq., Astoria, L. I. 2d best, P. T. Quinn. Best 3 varieties of Pears, Henry Tanner. Best collection of Pears, Ellwanger & Barry, Rochester, N. Y. 2d best collection, G. Marc, Astoria, L. I. Best collection of Apples, Ellwanger & Barry. Best dish of Nectarines, Henry Tanner. Best dish of Plums, Wm. Huggins. 2d best, Henry Tanner. Best 2 dishes of Peaches, Wm. Huggins. 2d best, Henry Tanner. Best 12 Quinces, Wm. Huggins. Best 2 Watermelons, J. A. Perry, Esq., Bay Ridge, L. I. Best 2 Muskmelons, J. A. Perry, Esq., Bay Ridge, L. I. 2d best, Thomas Prosser, Bedford, L. I. Best Ornamental Basket of Fruit, W. J. Reddy, gardener to Mrs. Packer, Brooklyn, L. I.

PLANTS.—Best collection of Plants, Louis Menand, Albany, N. Y. 2d best, Andrew Bridgeman, Broadway, N. Y. Best 4 Plants in bloom, Louis Menand. Best single specimen plant, Louis Menand. 2d best, I. Buchanan, Astoria, L. I. Best 6 Ornamental-leaved Plants, Louis Menand. 2d best, Parsons & Co., Flushing, L. I. Best single specimen ornamented-leaved plant, Louis Menand. 2d best, James Weir, Bay Ridge, L. I. Best 2 Orchids, I. Buchanan, Astoria, L. I. Best collection of Ferns, Louis Menand. 2d best, Parsons & Co., Flushing, L. I.

CUT FLOWERS.—Best display of cut flowers, David Clark, 77th street and Broadway, N. Y. 2d best display, Gustavus Messelberg, gardener to H. M. Barnes, Esq., Brooklyn, L. I. Best display of Roses, Dailedouze & Zeller, Brooklyn, L. I. Best 12 varieties of Roses, Dailedouze & Zeller, Brooklyn, L. I. 2d best, David Clark, 77th street and Broadway, N. Y. Best display of Dahlias, A. G. Burgess, East New York, L. I. 2d best display, Pierre Brunner, gardener to the Liwellyn Park, Orange, N. J. Best 12 varieties of Dahlias, Pierre Brunner. 2d best 12 varieties, C. S. Pell, Esq., N. Y. Orphan Asylum. Best 18 varieties, Pierre Brunner. 2d best, C. S. Pell. Best 6 varieties, Pierre Brunner. 2d best, C. S. Pell. Best collection of Verbenas, Peter Henderson, Jersey City, N. J. Best collection of Gladiolus, Andrew Bridgeman. 2d best, G. Marc, Astoria, L. I. Best parlor or table bouquet, Jas. Weir, Jr., Bay Ridge. Best pair of hand bouquets, James Mallen, Florist, Brooklyn, L. I. 2d best, Andrew Bridgeman. 3d best, Isaac Cummins. Best basket of flowers, Andrew Bridgeman. 2d best, Philip Zeh, gardener to A. A. Low, Esq., Brooklyn. 3d best, Jas. Weir, Bay Ridge, L. I. Best basket of wild flowers, Jas. Weir, Jr.

VEGETABLES.—Best display of Vegetables, J. A. Perry. 2d best, J. S. Barnes, Staten Island. 3d best, Thos. Prosser. For correct labeling of plants, Andrew Bridgeman.

HONORABLE MENTION.—To Jas. Weir, for new varieties of Grapes.

SPECIAL AWARDS.—To A. Van Blarcom, Flatbush, L. I., for superior specimens Peach Blow and Mercer Potatoe. To B. H. Mace, Delaware and Concord Grapes, on vine. To Wm. Cockerill, gardener to B. C. Townsend, Esq., Bay Ridge, specimen of the new upright Tomato. To Peter Henderson, Jersey City, new seedling Verbenas. To A. G. Burgess, East New York, L. I., new seedling Dahlia. To Chas. A. Cyphor, Tarrytown, N. Y., design for rustic dwelling. To Gustavus Messelberg, ornamental stand of flowers. To L. Menand, Albany, two fine specimens Banana tree—one of them in fruit. To Miss DeGraw, for fine Peaches.

On Wednesday, the opening day, the weather was very stormy ; but in the evening the rain ceased, and the attendance was very good. On Thursday the attendance during the day was good, and in the evening there were more people present than the room would contain, and the lobbies and gallery of the theatre were thrown open to accommodate them. In the afternoon a Conversational

Meeting was held in the gallery, in which Messrs. Mapes, Mead, Fuller, and Hogg, took part. The subject was the Pear. In the evening, Dr. Trimble lectured on Insects, but was unable to finish, losing his voice in the midst of his discourse. The end of a large gallery like that was altogether an unfit place for any man to speak in, unless he had the lungs of a stentor. As far as he went the doctor was listened to very attentively. On Friday, the last day, the number of visitors was very large, and in the evening the place was crowded to excess. There were to have been lectures in the evening by Dr. Grant and Mr. Mead; but it being impossible for the Doctor to speak in the gallery to such a large assemblage, and neither the stage nor any other suitable place being at the command of the Committee, the lectures were postponed, and Mr. Mead accordingly apologized to the audience for their disappointment, and thanked them for their generous encouragement and support. The affair passed off pleasantly, as might have been expected from people who had come together to be pleased. We may say, in conclusion, that the exhibition was the most satisfactory one that the society has yet held, which very few were prepared for in these times of civil war. We think this result is owing in no small measure to the new sphere of usefulness in which the society has lately embarked, and which, if followed up, must give it a commanding position in the future. On the present occasion we have been greatly indebted to the unceasing exertions of President Degrauw, ably assisted by Secretary Miller, as well as by Mr. Fuller, Mr. Hamlyn, and other members of the Committee of Arrangements. Let them "continue in well doing."

SEEDLING GRAPES.—We have lately received a number of seedling grapes, and the probability is, that we shall have more to notice in our next. From Mr. Carpenter, of Kelley's Island, we have received two, the *Lydia* and the *Mottled*. Of these Mr. Carpenter says:

"*Lydia*.—Seedling of Isabella; growth and foliage resembles its parent, but not quite so rampant. In severe winters, like the last, it suffers some, but not so much as the Isabella. It bears good fair crops, is in eating condition one or two weeks before the Isabella, and hangs well on the vine long after the Isabella is gone: standing severe frosts without injury. *Mottled*.—Seedling Catawba, growth strong, leaves fine lobed and rather light colored. In eating condition a few days after Delaware, and hangs on long after maturity. Has never been winter killed, and bears very heavy crops. Neither of the above is in its prime; but I send them now because, having but a few vines in bearing, the birds are destroying them rapidly, and in a few days I shall not have a perfect cluster of Mottled left. I have other seedlings in fruit which promise well. The season here is always later than on the mainland. The influence of the lake retarding vegetation in the spring, while the water is cold, but when warmed by the summer it keeps off the frosts until quite late into the fall. To show you the state of our Catawbas and Isabellas, I send specimens of them also, by which you can judge somewhat of the comparative time of ripening of the seedlings."

We should judge that they both ripened a week or ten days before the Isabella. The Lydia is of good size in the bunch, compact, with a large berry of a green color. The flesh is crisp and juicy, but not of the highest flavor. The Mottled is a good sized bunch, compact, with medium size berries. The color is darker than the Catawba, and mottled. The flesh is melting, a little hard in the centre, juicy, sprightly, and well-flavored. Neither was quite ripe, and could not be fairly judged, but we have no doubt that the Mottled will prove much the best grape, and a good one. From Dr. Grant, of Iona, a dark colored grape, good sized bunch and berry, with a decided Hamburgh flavor; very distinct and good. From Mr. Woodward, of Mortonville, the *Woodward* grape, which we also had an opportunity of examining on the vine. It resembles the Isabella, of which it is thought to be a seedling. It is said, however, to be nearly two weeks earlier; but this point will be tested before it is sent out. Its flavor is the same as the Isabella; an Isabella, with two weeks' gain in point of time, will be worth having. From Mr. Manning, of Reading, Mass., the *Dracut Amber* Grape, said to ripen ten days before the Concord. Bunch small, berry large; dark amber color; flesh hard, with a strong "native" aroma. Mr. Manning says it makes a good wine. The quality is too inferior for a table grape. From Mr. Eli Sperry, of Woodbury, Conn., a box of native grapes. We are sorry to say that they have no value whatever. From other parties we have received a number of "native" seedlings, which we have seriously thought of sending to Gen. Scott, for army purposes: the smell of them would scatter the rebels faster than the smell of gunpowder.

BOOKS AND CATALOGUES RECEIVED.

Illustrated Catalogue of Vines, etc., with explanatory Remarks, and Indications for Cultivation, by *C. W. Grant*. Post-office address, Iona, near Peekskill, West Chester Co., N. Y.—This is a new and improved edition of the Illustrated Catalogue, very valuable for its descriptive matter. The engravings are the most faithful that we have seen. The prices for vines have been considerably reduced, to meet the times.

Catalogue of 1861, comprising a descriptive List of Grape Vines and Small Fruits, Fruit and Ornamental Trees, Shrubs, etc. *J. W. Manning*, Reading, Mass.—Comprises the usual assortment of Trees, Shrubs, etc.

Descriptive Annual Catalogue of Bulbs and other flowering roots, with directions for their culture and management, offered by *J. M. Thorburn & Co.*, 15 John Street New York.—No better selection of Bulbs could be made; nobody can do without some.

Prince & Co's. Descriptive Catalogue of select varieties of Strawberries, comprised in their unrivalled collection. Linnaean Botanic Gardens, and Nurseries, Flushing, Long Island, N. Y.—This is the best and most satisfactory catalogue yet issued by Mr. Prince.

Abridged Descriptive Catalogue of Trees and Plants cultivated and sold by *Hall, Stebbins, & Co.*, at the Hickory Grove Nurseries, Toledo, Ohio.

Prince & Co's. Select Catalogue of their unrivalled collection of Bulbous Flowers of every class, and of Dahlias, Chinese Tree and Herbaceous Peonies, German Iris, Primroses, Polyanthus, Cowslips, Auriculas, &c. 45th Edition.

Descriptive Catalogue of Fruits, Ornamental Trees, Vines, &c., cultivated at the Lyons Nursery. *E. Ware Sylvester*, Proprietor.

Wholesale Catalogue of the Cherry Hill Nurseries, West Chester, Penn. *Hoopes & Brother*, Proprietors.

Catalogue for Fall of 1861 and Spring of 1862, Fruit and Ornamental Trees, Vines, &c., cultivated and for sale by *Isaac Pullen*, near Hightstown, Mercer County, N. J.

Transon-Forreau and Sons' Nurseries, Orleans, France. P. & E. Transon Brothers' Successors Nursery and Trade list for the Autumn of 1861 and Spring of 1862.—The Agents for this house are MM. Knauth, Nachod, and Kuhne, Bankers, New York.

J. C. Maxwell & Brothers' Descriptive Catalogue of Bedding Plants, Bulbs, &c. Geneva, N. Y.

Correspondence.

MR. EDITOR:—Please allow me a small corner in which to make a proposition to the Doctors of Pomology; and said proposition is, that some one of them propose, at the next meeting of the Pomological Society, to have a committee appointed, with instructions to make out a list of all foreign and domestic fruits, with the proper and synonymous names arranged, as has lately been done, I believe, by said Society, and to attach to each name and synonym the proper pronunciation and meaning. Or this might be done with all fruits at present cultivated in the United States.

Mr. Editor, if you can not see the necessity of this measure, please visit some nurseries. I have felt perfectly ashamed at the mispronunciation of names I had thought I was quite familiar with. Most all nurserymen I have met pronounce *Beurré*, *Bur-ry*, and some *Bu-ur* or *Beaur*, but Downing gives *Burray* as the proper pronunciation.

Then comes the name *Glou Morceau*, sometimes pronounced *Glue Morse-o*, sometimes *Glue Morso*, sometimes with the accent on *Mor*, and sometimes the accent is placed on *so*. Pretty near as bad is *Virgalieu*, *Virgaloo*, etc., etc.

I should think no respectable nurseryman would refuse to subscribe for such a work.

I am sorry to see the loose manner in which the words *graft* and *bud* are

used, especially in connection with Dwarf Pears. I have noticed several times, in the HORTICULTURIST, this fault in the writings of some of our most learned American Pomologists. They often speak of "the Pear being grafted too high on the Quince," when, in reality, they mean "budded." Grafting the Pear on the Quince is an operation that very seldom succeeds, and does not make a lasting union; therefore it is but seldom resorted to; but I have known persons to have been led to believe that grafting was generally resorted to, and to have tried it repeatedly, and failed, just from this loose language. (See Revised Edition of Downing, p. 707.) I am about planting a specimen orchard of Pears; I wish to have them Dwarfs, if possible. I have come to the conclusion to obtain scions, and graft them on maiden plants of Vicar of Winkfield, budded on Quince. But, when they bear, will they exhibit a true comparison of the merits of the several varieties?

Would a specimen orchard of Apples, budded on Paradise stocks, exhibit a good comparison of the fruit and growth of tree?

Speaking of Dwarf Pears, Downing says, page 707: "As it diminishes the vigor of the tree, it is not improbable that continued propagation from dwarf trees may somewhat lessen the vital powers and the longevity of a given variety."

Field also speaks in somewhat the same manner, but says he has as yet seen nothing to confirm these fears.

It is often very convenient to take scions from dwarf trees; what does the editor say, (as he is supposed to know every thing?) What of dwarf Apple scions? and buds from Peaches, Apricots, and Nectarines, on Plum stocks? also Dwarf Cherries?

How can I obtain all the writings of Harris on insects? Is there not now a part of his writings in course of publication?

Syracuse, Sept. 5.

NURSERY TYRO.

[The suggestion you make to the Doctors of Pomology would be welcomed by thousands of seekers after knowledge, especially by those whose sources of information are necessarily very limited. Uniformity of orthography and pronunciation are particularly desirable; we believe that a committee of the Society are now engaged in doing something of this kind.—Your criticism on the words *graft* and *bud* is quite proper. A loose application of a word may sometimes lead others into grave mistakes, and we can not be too careful in this respect. Your scions grafted on the Vicar, as proposed, will afford you a true comparison of the merits of all kinds suited to the quince; some, as the Bartlett, will be more durable in consequence; others, again, will do better than if worked directly on the quince.—In regard to the apple on Paradise stock, we answer, yes; but all kinds do not do equally well on Paradise stock.—We should not hesitate a moment to take scions from healthy, vigorous dwarf trees of the kinds you name. The sap vessels have in a measure been modified while on the quince;

but if placed on a sound, healthy pear stock, they will adapt themselves to their new condition just as readily as they did to the old. The important points are, to have a healthy scion, and a healthy stock to put it on.—You can obtain such of Dr. Harris's writings as have been published, of C. M. Saxton, 25 Park Row, New York. Some are now in course of publication.—ED.]

MR. EDITOR:—I notice in your valuable "Hints on Grape Culture," you place the Delaware at the head of the list for general cultivation. On examining my Delawares, I was surprised to find them cracking; they appear to have set too much fruit, and, not having room to swell, part of the berries are burst by the pressure of their neighbors. Do they require thinning, like exotics? My native Grape-vines were badly knawed last winter by mice; how can I prevent such depredations in future? Would it do to wash the vines, on covering them, with some mixture, either distasteful or poisonous to the "*varmint?*" Any suggestions in your correspondents' column, reaching my case, will be thankfully received.

Yours respectfully,

Amesbury, Mass.

J. H. OSBORNE.

[We have seen two cases, this season, in which the Delaware has cracked in the manner you allude to, but have not noticed it before. This happened immediately after the first rain succeeding the drought. The berries swelled rapidly, and the thin and tender skin of the Delaware broke, or, rather, some of the berries were crushed. It was simply owing to the too rapid swelling of the berries under circumstances that do not generally occur. This ought to cause you no uneasiness. All grapes are benefited by being thinned out, but it is no more necessary in the case of the Delaware than in that of the Diana, and others. In covering your vines, remove every thing that is likely to afford a harbor for mice, such as leaves, etc. If the vines are smeared with soft-soap and common tar; the mice are less likely to trouble them. They will eat Costar's pills, when put in their way, which are sure to kill them; but they are poisonous to domestic animals, and therefore dangerous to use. Some of these means, used with care, will greatly lessen or remove the evil.—ED.]

P. B. MEAD, Esq.—Dear Sir,—In the engraved plate of Strawberries which you present in your last number, the same error is renewed which has been heretofore committed, and by which even Mr. Downing was misled, describing under the name of McAvoy's Extra Red, a totally distinct variety named and sent out from Cincinnati as McAvoy's No. 1. The Extra Red proved to be the most sour and worthless of all Strawberries. It is an *Hermaphrodite* variety, with *dark crimson berries*. The McAvoy's No. 1, is a *pistillate* variety, with *light scarlet berries*, rather acid, but not so much so but that they are rendered palatable by sugaring. Having originally received these and the McAvoy's Superior and Longworth's Prolific direct from Mr. Longworth's garden, and a duplicate assortment from Mr. McAvoy, and a triplicate from another Cincinnati garden, they have always

been cultivated in my garden with precise identity. I refer to the confusion of the two varieties more especially, because I have been twice assailed for my description of McAvoy's Extra Red, (once by Carew Saunders,) when the complainants were utterly ignorant of the actual facts, and were themselves misled by having McAvoy's No. 1, under an erroneous name. While on the subject of Strawberries, I will cursorily refer to the much-mooted point, "the best period for transplanting them." After the numerous plantings we have made, we have attained to a settled conviction on this question. I am positive that the month of September is preferable before all other periods for the State of New York and the States to the north of it, and from the 20th September to the 1st November, for the States adjoining on the South as far as the Potomac; and the months of October and November for the more Southern States. The plants set at the periods named will become well established, and will usually form several runners before the winter sets in. They will consequently be well prepared to sustain themselves through the severe winter weather, and will produce a fair crop the ensuing season.

I am often amused to hear people express fears as to cultivating Strawberries successfully in our Northern States. Why so? I ask them. The Strawberry is found growing naturally further north than any other garden fruit. Hudson's Bay abounds with them. Richardson found vast fields of them in the Arctic region. The shores of Oregon and around Puget Sound produce fine Strawberries in great profusion. In point of fact there is not a garden in our most Northern States, and including the British Provinces, which can not be made to readily produce as fine Strawberries as we grow around New York.

Yours fraternally,

Wm. R. PRINCE, *Flushing, Sept. 16, 1861.*

[In regard to the Extra Red and McAvoy's No. 1, we know there has been some confusion. We got our plants of Mr. Longworth, who selected them very carefully when in fruit, and pronounced them to be genuine. We also received the same from Mr. McAvoy through Mr. Pardee. We append a description of both taken from our memorandum book for 1854, and should be glad to have Mr. Prince compare it with his own, and see how far it agrees with his:

McAvoy's Extra Red, Pistillate: foliage large; deep green; leaflets elongated; serratures medium; flowers small; petals 5, round.

McAvoy's No. 1, Pistillate: foliage large, deep green; leaflets roundish; serratures coarse; flowers medium size; petals 6, somewhat open.

It will be seen, that though we got our plants from the same source that Mr. Prince did, they are both pistillate. We have always supposed them to be true. If possible, we should like to have each identified. In regard to the fruit, No. 1 is less acid than the Extra Red. Mr. Longworth might throw the necessary light on the subject. Mr. Prince's experience and our own agree precisely in regard to the best time for planting the Strawberry; beds, indeed, may continue

to be made around New York up to at least the middle of October, with the certainty of a moderate crop of fruit the next spring. It is astonishing how rapidly a newly planted Strawberry will root in the fall of the year. We think nobody need have any fears as to the successful cultivation of the Strawberry in our Northern States, and it is a fruit that all should have.—ED.]

PETER B. MEAD, Esq.: Sir,—If you have ever been upon the highlands of the Delaware, in northeast Pennsylvania, you may have seen the Rhododendrons which grow there, often in large bodies, and reach the height of ten or fifteen feet. They appear to flourish upon a thin sandy soil, resting upon a compact subsoil. They are beautiful, both in flower and foliage, having leaves seven inches long and perhaps two broad.

Is this the Rhododendron maximum, or the American Rosebay, or the Tree Laurel? Is there a more desirable, thoroughly hardy kind, suitable for a lawn of a half acre's extent?

I have a bed of Kalmia latifolia; the plants, which were old ones by the roadside that had been cut down to the ground, and had sent up a new growth, stand two feet apart, and are about two feet high. Would not the intermediate spaces be well adapted to raising Rhododendrons from the seed?

In regard to Kalmias, my experience leads me to think that the rays of the sun must be always kept from the foliage by trees *entirely overspreading* them. The winter sun I think to be as injurious to them as the summer. But the branches of a large deciduous tree appear to temper sufficiently the sun's rays in that season. Those plants in my bed which are thus protected have now, for two years and a half, kept their foliage unshriveled, and of a dark green color, while the others, immediately after they were transplanted, sent out a vigorous growth, with narrow and yellow leaves, and continue to do so.

It is an unfortunate necessity to be compelled to prepare shade for plants of this kind, and probably for Azaleas, Hollies, &c., but does not your own observation confirm what I have said? I have heard it said that swamp muck, owing to the lime contained in it, is not good for plants of this class; others recommend it highly.

Is there any thing inadmissible in the root-pruning of the Grape Vine? I have a border, fifty feet by six, containing four Isabella vines, planted eight years ago. The soil is a good gravelly loam, resting upon gravel, and was enriched, to the depth of two feet, with a large quantity of stable manure, and two barrels of poudrette and ground bones. Each vine has borne nearly every year, but only a few bunches, and those not very large, nor more than once or twice sufficiently ripe to have the true rich flavor of the Isabella. The growth is very rank, and they have been regularly fall pruned, though, perhaps, unskillfully. Last fall it was done by an experienced vine dresser, and the wood largely cut away, with a view to get in place of it a new stock of wood. This summer, considering the

close fall pruning, and the winter killing which befell the vines, the number of bunches they show may be indicative of a *perceptible* increase in productiveness.

This summer I have, for the first time, kept the vines curtailed, confining them by pruning to the trellises, eight by eight, and the young laterals to one joint from the cane. But there is so much forcing power at the roots that the buds of the laterals are bursting, and I have the mortification of seeing my next year's crop somewhat lessened by the operation. Now, Mr. Editor, is there any other way than to root-prune in a case like this?

The trellises lean against a lattice screen, running parallel to a barn, and four feet from it, leaving a passage way which is roofed. The vines are planted two and a half feet from the lattice, the lattice seven and a half feet high. The trellises face 30° S. of W.; the vines have all the sun after ten o'clock. With these details, perhaps you may be able to suggest some cheap plan for a glass covering, if the vines can ever be made to bear abundantly. In this valley we can rarely have thoroughly ripe grapes, without brick walls or glass covering. The vines, I should think, might remain uncovered from the 1st of June until the 1st of September; or would you suggest to destroy these vines and replace them with Concordes or Delawares, or Peaches, to be trained and provided with some kind of screen for winter protection? I see I am making a long list of questions, and, perhaps, taxing your time.—Very respectfully, your obedient servant,

Owego, Sept. 3, 1861.

A SUBSCRIBER.

[We are much pleased with the manner in which you describe your difficulties; you make them interesting to others as well as yourself. The Rhododendron alluded to, we have no doubt, is the R. maximum. The space between your Kalmias might be used for seedling Rhododendrons, but we should prefer making a bed for them, especially if the seed had been hybridized: success would be much more certain. If Kalmias are transplanted when quite young, they will bear considerable exposure, and keep their foliage thick and green; otherwise, your plan is best. They will always be more stocky if not smothered by limbs of trees. If planted on the east or southeast side of a clump of trees they will need no other protection. We esteem muck very good for this whole class of plants. Your Isabella vines have undoubtedly been over-stimulated. A little root pruning, and withholding manure for a year or two, would bring them into bearing condition again; but we would advise you to plant other kinds, with no other preparation than simply forking over the soil. Treat the Isabellas as suggested, but gradually replace them with Delawares, planted four feet apart in rows, the rows being about six feet apart. The Delaware will ripen with you. The Isabella is not worth the trouble of covering with glass. It would be better to build a cheap grapevry than take so much trouble with the Isabella. Try our suggestion, and begin this fall; you will hereafter thank us. The stopping of the top and laterals will inevitably cause the buds to break, when a vine is growing vigorously. Pinch the laterals to a leaf as soon as that leaf is as big as a dollar, but let

the tops go. Our grape articles will explain all this before you reach another season. Please let us hear from you again, and tell us about the average of your spring and fall frosts, how late and how early. We will then tell you more about grapes, and something about peaches.—ED.]

CORRECTION.—In the note of explanation to your Frontispiece, in the July number, you state the plate to be taken from a plant in the collection of Mr. Humphrey, Brooklyn, who has the “original stock ;” and as it is found there “an *unbaptized heathen*,” you stand godfather for it, and give it the name of *Spiralis rubra*, which is all very good, if it had never been presented at the *baptismal* font before ; but this same Camellia is not such a youth as you seem to suppose.

An amateur in the vicinity of New York, an ardent admirer of rare plants and good specimens, added to his collection several years ago a splendid plant of the Camellia in question, he believing it to be the “original and only stock,” (I have seen more “original stocks” of it since,) named it *Cochlidea*, which means a spiral staircase, and as such freely distributed it among his friends, and it is now to be found, under the name of *Cochlidea*, in many of the private and public collections around New York, in those of Peter Mackenzie and Son, and Robert Buist and Son, of Philadelphia ; also in some of the more extensive nurseries in Europe.

I am led to make these remarks, hoping to save some of your readers the disappointment of buying one plant under two names.

UNDE.

[Let us first thank our correspondent for the information that the Camellia in question has been by somebody named *Cochlidea*, so that hereafter we may be in no danger of buying the same plant under two names ; next we propose to state a few facts within our personal knowledge. We have made no statement which could lead any body to the conclusion that we “supposed” this Camellia to be a “youthful” plant ; on the contrary, we stated that it was raised by Mr. Becar some time before he died, and we all know that he has been dead several years ; notwithstanding, it may still be called, so far as the horticultural world is concerned, a new Camellia. Now it so happens that for many years before Mr. Becar’s death we were on the most friendly and intimate terms with him, and a frequent visitor at his house, and this and his other seedlings were a frequent topic of conversation ; what they should be named, how sent out, the best mode of raising the Downing fund, and similar matters, were often discussed ; in short, we have an intimate knowledge of these Camellias and Mr. Becar’s plans up to the time of his death. That the *Spiralis rubra* was not named *A. J. Downing* was determined by an eminent florist still living in New York, he, as well as ourself and some others, considering the latter the best, Mr. Becar leaning to the first ; but it was a remark made by the gentleman referred to that determined the point. Now we know that Mr. Becar suspected that a plant of the Camellia under consideration had got out of his house without his knowledge, and it may turn up somewhere else under still an-

other name. We do not deny, of course, that the particular plant referred to by Unde may have been named by the amateur to whom he alludes; but this *Camellia* was certainly never presented at any legitimate "baptismal font" until we gave it the name of *Spiralis rubra*. It is altogether a mistake to say that we found it an "unbaptized heathen;" it was in danger, however, of having a very heathenish name attached to it. As Mr. Humphrey's plant came from Mr. Becar's collection, it was proper enough to call it original stock. Unde says, "it is now to be found under the name of *Cochlidea* in many of the private and public collections around New York." This is somewhat remarkable. We have for more than half our life been familiar with nearly all the public and private collections around New York, and it is only within the past two years that we have seen it in two or three private collections, and in none of them under the name of *Cochlidea*, to the best of our remembrance, though we may be mistaken in one single instance. Two or three florists in Brooklyn have had it for a couple of years past, but called it, like some others, the Screw. Messrs. Buchanan, Bridgeman, Hogg, Reid, etc., are our principal *Camellia* growers in New York, and it is not now, and never has been in their collections under any name whatever. How extensively it may be distributed in Philadelphia, we do not know; but whoever has it ought at once to adopt its legitimate name of *Spiralis rubra*.—ED.]

A CAPITAL APPLE PARER.—We have on our "table" an Apple Parer, made by Whittemore Brothers, which we consider a perfect thing of its kind. The skin is removed from the fruit without waste; the waste, indeed, could not be less with the utmost care when done by hand. The operation is quickly performed and there is a great economy of time and means. Mr. Lane, 41 Park Row, is the New York Agent for its sale. He is also Agent for a number of other inventions of much value.





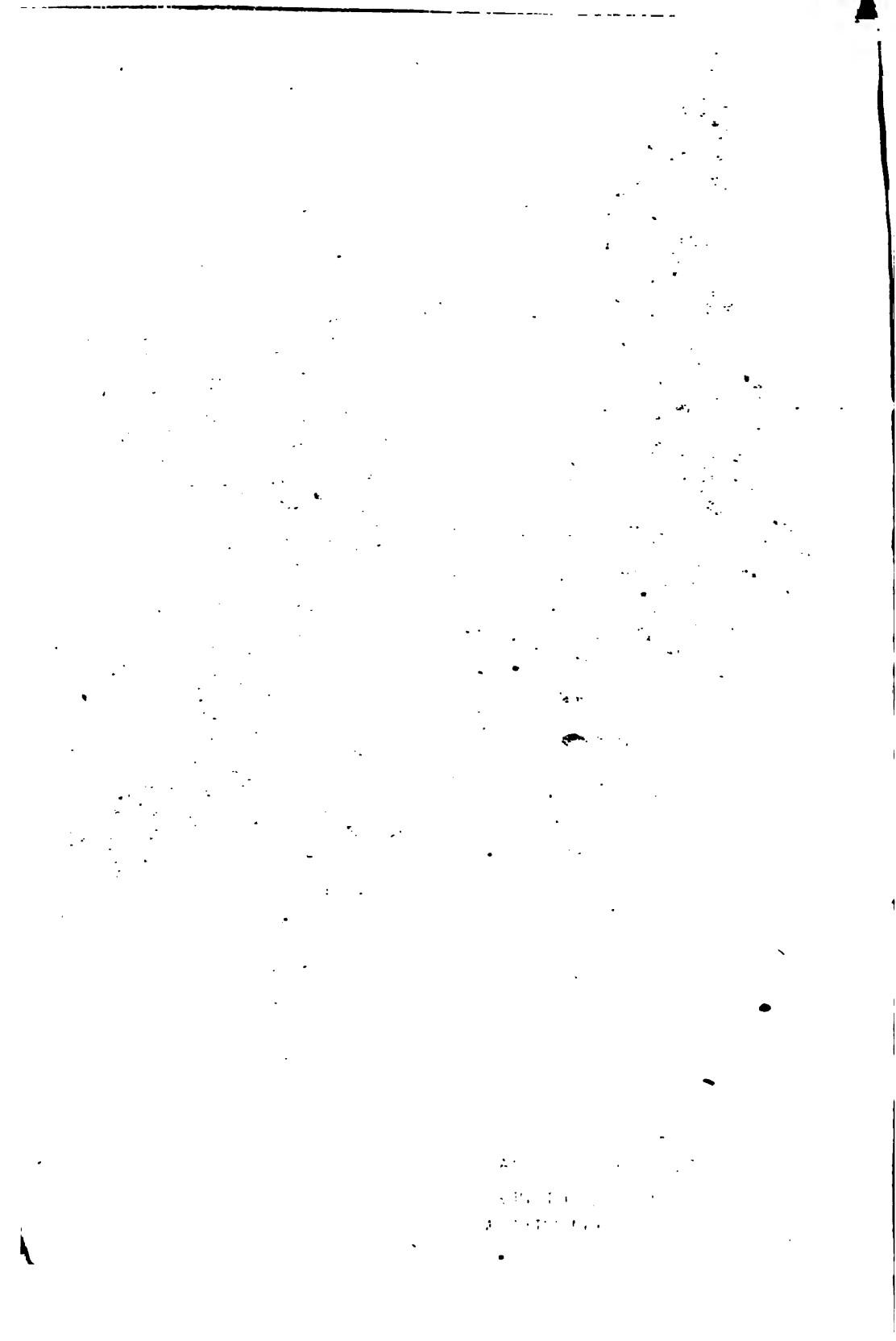


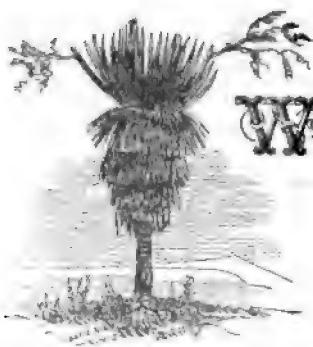
NORTHUMBERLAND FILLBASKET,

for THE HORTICULTURIST

Published by C. M. SAXTON, New-York.







Hints on Grape Culture.—IX.

WE have as yet said nothing specially relating to the food of the vine. We remarked in one of our early articles, that the vine would grow in almost any soil; yet it has its wants, special and otherwise, which can not be neglected without detriment to its health and productiveness. Unless food of the proper kind is placed within immediate reach, the roots wander off in search of it, finding perhaps only a meagre supply, and that often under conditions very unfavorable to its proper appropriation. Not unfrequently, in this search for food, the roots penetrate a cold and uncongenial soil, where they sometimes perish, and often communicate disease to the vine itself, which thus becomes incapable of maturing its wood and its fruit. In this condition the vine becomes susceptible to the attacks of various forms of disease, and we may frequently find here the fruitful source of mildew and rot: these attacks might often be measurably prevented by a judicious management of the soil and food, whereas the vine is only too often prepared, as it were, for their entire possession. In these things we are usually more tender to our domestic animals than to our plants. The roots of the vine may, to a considerable extent, be kept at home by a judicious system of feeding. This we shall endeavor to explain when we come to treat of the nature and functions of the roots.

We propose now to offer some hints on *Composts and Manures*. Manures are usually, but not very happily, divided into Animal, Vegetable, and Mineral, as they happen to be derived from either of these sources; it is only the last, however, that are usually kept distinct. Under the first head we place all animal matters, such as flesh, hair, leather, hoofs, woolen rags, wool, bones, horns, &c. Under the second, muck, sods, green crops, leaves, weeds, &c. Under the last, lime, marl, ashes, plaster, &c. Barn-yard manure is of a mixed character. Liquid manures are variously composed. *Composts* are made by mixing any or all of these together, and are of especial value. As we can not at present treat of these in detail, we shall confine our remarks to those most valuable for the grape, which, unlike many other plants, is almost omnivorous.

We have often expressed a most decided opinion as to the value of muck, or vegetable matter reduced to the carbonaceous form. This we make the basis for all composts for the grape. It is important that it should be well mixed all through the soil, unless the latter already contains a due proportion of vegetable matter, which is seldom indeed the case. There is no other substance whatever within our knowledge that will give such permanence to the soil: and permanence is of

the very first importance in the formation of a vineyard. This importance will be enhanced, if possible, when we inform the reader the reader that, contrary to the common practice, we banish the plow from the vineyard after the third or fourth year, since it then becomes a dangerous implement in any except very careful hands. There are other implements much better and safer. The simple reason for this is, that the best roots of the vine are within from four to six inches of the surface, (at least that is where we propose to keep them,) and the plow, except very carefully used, destroys them. After a vineyard becomes established, we must necessarily, therefore, depend upon surface manuring and surface culture.

We will now state briefly the best mode of forming a compost to be applied at the time of trenching or subsoiling. The materials we name somewhat in the order of their importance. Barn-yard manure, muck, lime, bones, (broken bones, bone chips, and bone dust,) ashes, charcoal dust, horn shavings ; to which may be added, leather chips, pond mud, road sweepings, sods, potash sweepings, lime rubbish, decayed leaves, etc. Any or all of these may be used ; but muck, manure, lime, bones, and ashes, are most important. It is a common practice to mix the manure with the muck at the beginning, but this is not a good plan unless the muck is already in a tolerably fine condition. If the muck is coarse and full of fibre, it should be laid up to dry, then treated with quick lime to hasten decay, and turned from time to time till it is quite broken down. There is much waste in having barn-yard manure in contact with lime for any length of time. Muck should not in any event be used in compost till it has been dried. The manure, which should always be pretty well decomposed, can very well be added when the compost heap is turned for the last time. Bones, as commonly bought, have often been boiled, and have thereby lost much of their value. For agricultural purposes, bones, whether broken or not, should contain as much as possible of their fatty and gelatinous matter, which greatly enhances their value. The compost heap should, if possible, be made under cover, or in some way protected from heavy rains. If it is not convenient to cover it, let it be made in some spot where it will not be washed away.

Let us now suppose the muck, manure, etc., in proper condition for being mixed. The reader will want to know the proportion of each material to be used ; this need not be quite as exact as a medical prescription, nor is it necessary to measure the materials out. A very good way to form a compost heap is as follows : mark out the dimensions of the heap, and spread on the ground about three inches of muck, on which sprinkle quick-lime till it is quite white ; then spread on a couple of inches of manure ; next about three inches of muck ; then a good sprinkling of bone dust or bone chips ; then again three inches of muck, sprinkled with ashes ; and here may be added, if you have any of them, charcoal dust, horn shavings, leather chips, etc., with a layer of muck between them, finishing with a layer three inches thick, on which begin the course again, and repeat it

till the heap is four or five feet high, if necessary, the top being covered with a good layer of muck. In a few days the heap will begin to heat, and when it becomes warm it should be turned. This is best done by working down from top to bottom, which commingles the materials thoroughly. The turning should be repeated several times, when it will be fit for use. If muck be abundant, the quantity we have named may be greatly increased, while the other materials remain the same. The heap may also be watered with liquid from the barn-yard. This compost should be spread on the surface of the new vineyard from three to twelve inches thick, according to the nature of the soil and one's own circumstances. If the soil is a good loam, such as will grow good corn and potatoes, from two to four inches will be enough. Soils varying from a light loam to lean sand and gravel, should have from four to twelve inches of compost. After being spread on the surface, the compost is to be worked in as described in a former article, the object being to get it as deeply and thoroughly mixed with the soil as possible.

A compost similar to this may be made by using muck as an absorbent in stalls, etc. This may be thrown into the barn-yard with the manure that is made, and more muck added to the manure as it is thrown out daily. At proper intervals it is removed from the yard and laid up in a heap, and turned from time to time as it becomes warmed through. If the muck is fibrous, it will require from one to two years to rot it down thoroughly. To this heap, the other materials, or such of them as can be procured conveniently, may be added a couple of months before the compost is wanted for use. No one, however, need be deterred from making a vineyard for the want of them; for though valuable additions, a good compost may be made of simple muck, manure, and lime; or, if the soil is rich in vegetable matter, the muck may be omitted, or may be replaced with leaves, sods, weeds, etc.; but to all light soils we deem the muck essential, not only to give permanence to the soil, but quality to the fruit. If the other materials are omitted, the quantity of barn-yard manure must be increased.

In our next we shall continue the subject of composts and manures this article being now sufficiently long.

LANDSCAPE ADORNMENT.—NO. 17. "TERRACES."

BY GEO. E. WOODWARD,

Civil Engineer and Architect, No. 29 Broadway, New York.

If there is a department of Landscape Art more noted than any other for its frequent failures, it certainly must be the construction of Terraces. With the established prejudices in favor of the old school straight-line Terrace, and the prevalent primitive notions of their construction, there should cease to be any surprise if failures are common.

Terraces were originally introduced as a connecting link between the house and grounds, and we must confess that, in spite of the adoption of the natural style of landscape treatment, the architectural Terrace, in connection with the house, has, to our mind, a grand and imposing appearance. It can never be, or rather ought never to be wholly abandoned, where a display of high landscape art is contemplated.

Another important use of the terrace in the artificial, or, as it is sometimes called, the geometrical style of Landscape Adornment, was for the purpose of joining plateaus of different elevations, these plateaus sometimes being essential to the proper artistic harmony of formal lines, the waving undulating lines of natural surfaces having nothing in common with rigid architectural forms. It is necessary that angles and straight lines be confined to either level or slightly inclined planes, else, by their strong contrast to natural lines, they become offensive to the eye; therefore, it was necessary to break up or separate plateaus by terraces, or reduce them by much labor and expense to a common grade.

The terrace is also made use of in the protection and embellishment of hill-sides, and it is in this manner that we propose to treat it. The formal terrace, when used for this purpose, possesses too many elements of weakness to be of permanent value, and the same cause of insecurity is applicable to the whole or any portion of it, if constructed throughout its length of earth of the same character, it being by no means an unfrequent occurrence for the upper terrace, when surcharged with water, to yield for the whole distance, and to destroy or carry with it those below. The construction of straight-line terraces on hill-sides, in addition to their unsuitableness as reliable earth-works, are, except under unusual circumstances, a matter of great expense, and among the knowing ones very generally avoided; they have become, along the Hudson more particularly, proverbial for their expense and insecurity. The proper management of earth slopes and embankments is ranked among the skillful attainments of the educated civil engineer; yet the rural community labor under the impression that an expert vegetable physiologist is by far the most competent person to deal with those difficulties which require, in others, almost a life-long devotion and experience to surmount.

There is, however, a form of terrace that recommends itself strongly to the notice of those who find a pleasure or necessity in beautifying and protecting steep slopes, a form entirely in harmony with the undisputed beauties of the natural style of Landscape Adornment, and one that possesses in a great degree the elements of strength, and the charms of beauty, variety, and economy. We allude now to the natural terrace, as shown by the receding stages of running water, and best illustrated among the alluvial valleys of the West, a portion of our country that presents some of the most magnificent natural examples of the beautiful in Landscape anywhere to be met with.

The peculiarities of natural terracing are, its incurvate and recurvate outline, a constant variety in the length, character, and direction of the curves, a harmoni-

ous change in each successive terrace, adapting itself to the situation of declivities, requiring but little removal of earth to form a graceful contour, and possessing conditions of strength unapproachable in either the right line or the angled terrace.

Among the leading charms of landscape embellishment, variety should be well considered. One of the most fruitful sources of variety lies in the proper management of light and shade; and wherever the bold and ever-varying effects of shadow can be controlled, it is the duty of the landscape artist to avail himself of it. The natural terrace affords the opportunity for an artistic display of light and shade which is constantly changing in effect, the strong shadows of the recesses throwing into relief the prominent points which catch the light; it also contemplates the use of embellishments not often made use of on terraces, such as ornamental trees and shrubs, singly or in masses, the gay addition of flowers, the close-shaven and neatly-kept lawn, or for the more practical and quite as enjoyable pleasure of cultivating the Grape, for it should be understood that good taste exacts no such requirements as are deemed necessary, or at least practiced, in the old school terrace, viz., that a succession of terraces should be exactly parallel, and of the same height and breadth, and not devoted to any very useful purposes, a doctrine not recognized in any natural examples.

The strength of the natural terrace is of a character that can scarcely admit a doubt; the salient curves become like buttresses to a wall, and whatever force is exerted, instead of being in one direction, as in the case of the straight terrace, is distributed in such a manner that the same cause which might break through one point is powerless in others: the conditions of security are such that they do not depend on each other.

The judicious use of the natural terrace will obviate all of the prominent difficulties of the straight terrace, and if made use of by those who have a knowledge of the proper construction of earth slopes and embankments, there should be no such thing as a failure.

ON THE AURICULA.

BY AN OLD COUNTRYMAN.

MR. EDITOR:—As my papers on the Carnation and Chrysanthemum have met with your approval, I venture to send you my experience with another special favorite with old florists.

We must always remember that the Auricula is originally an Alpine plant; that cold and frost to almost any extent, it will bear when under glass; and that fire-heat in winter will do it much more harm than any frost that gets into a frame, if properly managed. But summer-heat is ruinous to it, (unless guarded against, as I shall presently direct,) and a few hours' full exposure of a

pot to such a burning sun as we have here often is enough, if it doesn't kill the plant outright, to destroy all expectation of recovering it under a twelvemonth's care. To grow Auriculas well, then, mix up an equal quantity of good loam, stable-manure a year old at least, and black peat earth. Turn this over two or three times during as many months, and mix plenty of it when you begin, for the longer you keep it the better it gets; but don't expose it to heavy rains, so as to let the goodness of the manure be washed out of it; but, except in wet weather, the more it is turned and exposed the better.

Having got your plants, say, in spring, just before they bloom, have the benefit of it, such as it is; and after they are out of bloom place the pots under a north fence, where they will be entirely in the shade, without any sun upon them at all. This you must effect in the best way you can, but you must not put any thing *over* the plants; if you do they will draw up weakly, and the heart will be so exhausted that no healthy growth will be made. Look over the plants daily, and take care they don't flag in the leaf for want of water. So let them be until the last week in August; then the time has been arrived at to pot your plants for next year's bloom, and upon the way in which you do this much of your success will depend. First, take some of your compost, and pass it through a coarse sieve, and throw the siftings on one side (you will want them presently), break up into pieces an inch square or so, some broken pots, and then you are ready to begin potting. For a plant the neck of which (at the place where the leaves spring from) is the size of your little finger, you take a pot measuring about four inches across inside. Place three or four pieces of the broken pots over the whole, and upon these put enough of the rough siftings of the compost to fill up the pot to the depth of an inch from the bottom. Then put in a small handful of the sifted compost. Now take one of your plants, turn the pot over upon your left hand, in which you will support the plant by passing the neck of it between the first and second fingers; give the edge of the pot a slight tap against the edge of your potting-bench, and the plant will come out upon your hand; press gently the matted ball of roots with your right hand, but so as not to tear or hurt them, and then shake the mould from it, so as to leave the network of roots nearly bare. (This takes many words to tell, but the whole thing is done in half a minute.) Now you will find the thick stem of the plant, which is called the tap-root, exposed to view, surrounded by the numberless mass of small roots that, if the plant is healthy, proceed from all its length. Examine this tap-root; if it is solid, nearly white, and free from black specs or rot, all is well; if any black marks appear, cut them out with a sharp knife. This done, the plant is ready for its new pot. Mind and preserve all the fine fibrous roots, which are the *mouths* of the plant, and only remove such of them as are dark colored, or have a withered appearance. To place the plant in its new pot, take it by the neck between the fingers and thumb of your left hand, and hold it in the pot so that the neck is just on a level with the top, and with your other

hand fill round it with the sifted compost, which, with a small stick the size of a quill, you must gently stir down between the small roots, giving the pot now and then a tap or two on the bench, to shake down and fix the mould. When potted, the earth should come up just to the bottom leaves, but not higher. If you bury the lower half of the leaves in the mould, depend upon it you will, before the winter is through, get half your plants rotted off at the neck. This is, of all things, one of the great points in Auricula growing.

When the plants are all potted, set them in a north aspect, out of the sun, as before; put boards or a good bed of cinders under them, so as to keep out worms, (this is a first point, too,) and then give them a thorough good watering through the fine rose of the watering-pot, so as to wet them well through. Here they are to stand until the fine weather sets in; slight frosts will not hurt them. Water them regularly; they will grow considerably; the old outer leaves will turn yellow and come off during the next two months, and by that time you will have nice short-leaved plants, with stiff necks and close hearts, which are sure signs of good trusses of bloom next spring.

As soon as signs of winter weather are manifest, whether by cold rains, snow, or hard frost, put your plants in their winter quarters. The best place for them is a common garden-frame, with a glass light upon it; but many and many a good show of Auriculas has been grown without glass at all, by having only a board top to the frame, upon hinges, like the lid of a box, to shut down at night and in hard frost, but to be open all day in fine, or raised up in front in wet weather. Take care here, too, to have something to keep the worms out.

And now for their winter treatment. In hard frost or snow, and always at night, shut down the lights close. At all other times, except in wet weather, draw the lights off all day; and in wet, and also in frosty weather, unless very severe, give air for five or six hours by raising the lights a few inches. They will want but little water until the beginning of February; only just prevent them from getting dry.

In frost throw over the frame a mat, or some straw or litter, at night; and if severe, this may remain on in the day also; and with even slight covering of this sort the plants will stand any weather. You will find their leaves get quite black with frost sometimes; never mind that; but do mind *this*: that when the frost breaks, and you begin to give air, don't let a hot sun come right down upon them at first, but raise the lights a few inches, and throw a coarse cloth on the frame, or just a handful of straw, thinly, so as only to let a little light through. If you have no glass, but only a wooden top, you have only to lift it half open, fasten it so, and shade the open side next the sun with a cloth. In this way your plants will take no harm with any frost, for they are hardy enough to stand almost any thing; but it is sudden exposure to the direct sunshine, upon the breaking up of frost, that kills them. During winter they should have sun; but



in the middle of some days in this country the winter's sun is pretty hot; and then I generally shade the frame for an hour or two.

As soon as you see, in the spring, that the plants are beginning to grow, you should give them a good top-dressing. For this, use the same sifted compost that you did for potting. Take a plant, and with the point of a small stick remove the top earth about half an inch deep, or rather more, and fill up its place with the new compost: at the same time take off any yellow and decayed leaves, and also any offsets that are rooted. Cut these off with a small penknife; don't pull them off. Then give the plants a good watering, so as to soak the whole ball through, because now you are going to begin growing for bloom.

Remember always, from the time the plants are put in the frames until they have done flowering, you must never water them over their leaves, because the water often would settle down in the heart of the plant, and rot it; and also that you always give water through a fine rose, holding it close to the pot, so that the water does not disturb the mould, which would expose the roots.

From the time you begin to grow for bloom, you must give extra covering at night, because, although frost would not hurt the plant, it will injure the young truss of flower which is now formed in its centre, and if this gets frozen at any time, in the first place your bloom will not be so large, and in the next it will not open flat. This is important.

Having top-dressed your plants, you will soon see their centre open, and your trusses of bloom begin to rise up on a straight, stiff stalk, and you must give water regularly, and not let them flag for want of it. But be cautious about one thing: sometimes, when the sun is pretty hot, and the trusses are growing, you will find the new leaves (which have got to be a good size) will flag in the afternoon; don't fancy this is from want of water, or you will overdo it. All that is wanted is to keep the earth in the pots just moist.

I will suppose the flower-stem is grown up nearly its full height, and that the pips are beginning to swell out. Now is the time for you to show your skill. If the weather is hot, you must at once move your frame out of the full exposure to the sun, and put it where it only gets it for an hour or two at sunrise; because, unless you contrive to keep your plants cool, the heat will expand the pips before they are half grown, and instead of having them the size of a quarter dollar, as you ought, and many sorts larger still, you will have them the size of sixpences. To grow the pips large before they expand, I have often in hot seasons taken one of the largest-sized empty flower-pots, and placed it in the shade on three stones, so as to have a draft of air through the bottom-hole, and then placed the Auricula pot in it, and put a hand-glass over it. Then, by leaving it thus for a week, and watering the outside of the *large* pot, so as to keep it wet, the evaporation from it has preserved for the plant such a cool temperature that I have had the pips a third bigger than they otherwise would have been. This, of course, can only be



done with a few plants, but an enthusiastic amateur does not mind a little trouble.

The offsets of Auriculas, when first taken off, should be grown round the edges of a good-sized pot for a twelvemonth, and then treated like the old plants.

[We are pleased to hear from you again. Like Santa Claus among the children, you always have some good thing in your "bag." It was a happy thought when you took out of it the Auricula. It is always admired, but very little grown. The amateur will only prize it the more because of the additional care of developing its full beauty. We would advise, in addition to the valuable suggestions of our correspondent, that as soon as the weather in spring gets to be pretty warm, the position of the frame be reversed, so as to face the north instead of the south. Sufficient sunlight will thus be secured, while the temperature of the frame will be several degrees cooler than if it faced the south: and this is just what is wanted to grow the Auricula successfully.—Ed.]

AMERICAN SHADE TREES.—No. IV.

BY C. N. BEMENT.

THERE are few things better calculated to attach us to our homes than rural embellishments. This is true, whether we apply the term to our neighborhood or individual abode. The public grounds about the great cities of Europe, some of which comprise an area of five hundred acres, are the theme of general admiration, the theatre of healthful exercise and recreation, and sources of high intellectual enjoyment. The lesser towns and villages of our own country, owe more of their charms and interest to the trees and shrubs which embellish their grounds, squares, and streets, in the eye of the man of taste, than to any ostentatious, showy brick and mortar—more to the beauties of nature than to the works of man. Nay, the highest efforts of the human intellect are in vain put in requisition to imitate the handiworks of the Creator. And when we come down to the suburban residence, and even to the unostentatious abode of the farmer, how are their beauties heightened, and their value advanced by a screen of ornamental trees.

The great objection to planting is, that one may not live to enjoy the fruit or the shade of the trees which one plants. Such an objection is unworthy of the age, which should, if it does not, have regard to the interests of the human family, and of posterity; and is, besides, affecting to hold a shorter term of life than all of us hope for, and most of us expect. "Twenty years ago," said the late Jesse Buel, "at forty years of age, we commenced the cultivation of what was termed a barren, untenable common, not an acre of which, neither a tree nor shrub, had ever been planted by the hand of man. We have now growing in our court yard, comprising about half an acre, and in the highway in front of it, fifty species of forest and

ornamental trees, many of which are from forty to fifty feet high; more than fifty species of ornamental shrubs, not including the rose, which in all the variety and hue of foliage, many be embraced in a single view from the piazza. We feel grateful to God for these rich and abundant blessings, and for the impulse which prompted our labor. We have adduced our own example, not in a spirit of vaunting, but to convince the young and the middle aged that there is abundant reason for them to plant with the hope of enjoying the fruit of their labor. The old *should* plant as an obligation they owe to society, and for the requital of which they have but a short period allowed them."

"Many a dreary and barren prospect," said the late A. J. Downing, "may be rendered interesting—many a natural and artificial deformity hidden, and the effects of almost every landscape may be improved, simply by the judicious employment of trees. The most fertile countries would appear but a desert without them, and the most picturesque scenery in every part of the globe has owed to them its brightest charm."

We claim it to be the duty of every man who is a farmer, to beautify his grounds and yards, so as to give his habitation as Eden-like an appearance as possible. Should our farmers be true to themselves, and dutiful to nature, then, with truth, of our country it may be said in the language of the poet, 'tis

"The land of the myrtle, the cypress, and vine,
Where all but the spirit of man is divine."

The OAK, termed by excellence the "King of trees," is remarkable for its suggestiveness of power, and consequent expression of grandeur. It is attired with the romance of early history; it is celebrated by its connection with the religion and religious rites of the Druids; with the customs of the Romans, who formed of its green leaves the civic crown for their heroes, and who planted it to overshadow the Temple of Jupiter; and many ancient superstitions give the name a peculiar significance to the poet and the antiquary. From its timber marine architecture has derived the most important aid, and it has thereby become associated with the grandeur of commerce and the exploits of a gallant navy, and is regarded as an emblem of naval powers. The Oak, therefore, to the majority of the human race, is, beyond all other trees, fraught with romantic interest, and invested with classic and historical dignity.

The American continent contains a numerous genus, comprising about sixty species, and many varieties, forty of which are said to be natives of the continent of America and Mexico. Of these the White Oak bears the most resemblance to the classical tree, in its general appearance, in the contorted growth of its branches, and the edible quality of its fruit. It exceeds all other trees, not only in its actual strength, but also in that outward appearance by which this quality is manifested. Hence it is regarded as the monarch of trees, surpassing all in those qualities that indicate nobleness and capacity. It is the emblem of strength, dignity, and gran-

deur : the severest hurricane can not overthrow it, and by destroying some of its branches, leaves it only with more wonderful proofs of its resistance.

Of deciduous Oaks, natives of North America, two require particular attention. They are, The CHAMPION OAK, (*Quercus rubra*,) and the SCARLET OAK, (*Quercus coccinea*.) These trees are beautiful objects. Planted singly, with taste and judgment, upon a spacious lawn or park, within view, at different points from the mansion, they claim admiration. Their figure is light and graceful, their foliage remarkable ; and whether as mere shrubs six feet high, or as trees forty or fifty feet high, these oaks stand preëminent. Loudon says, *Q. coccinea* is one of the handsomest of the American oaks. The leaves, which are six inches long, change in autumn to a beautiful scarlet color ; and unless very hard frost comes on early, they do not fall off the trees till Christmas, or later. Both are highly worthy a place in every lawn.

The SUGAR MAPLE.—Perhaps there are few trees in the American forest of more value than the Maple. As an ornamental tree it is exceeded by few, and its cultivation in the lawn should be much extended ; for avenues or the streets of towns and villages it stands unrivalled. Its sap affords an article of indispensable use, which is manufactured at the most leisure season of the year. Its timber is valuable in the arts, and ranks next to the hickory for fuel ; its shade is umbrageous and refreshing ; its form symmetrically beautiful ; and its growth is perfected in almost every soil. Whether we regard the beauty of its flowers and opening its early spring, of its red fruits in the beginning of summer, or its red foliage in autumn, it deserves to be considered one of the most ornamental of hardy trees.

If you want shade, plant the Maple ; that will give you in a few years, in a good soil, a firm, round-headed tree, with a canopy of leaves that will defy the sun's penetration, and in early spring a glorious display of flowers, equal to the Laburnum, and to us more interesting. A plantation made on the north or bleak side of the farm buildings, or the fruit orchard, or in both around permanent inclosures, is highly useful as a protection ; constitutes a most interesting feature of rural scenery, and will ultimate in a substantial profit to its proprietor.

What a delightful feature must this tree form in a rural scenery, and how easily it might be imitated in all parts of the country. The people of Massachusetts are entitled to much credit for their early attention to this subject, where a laudable emulation prevails in transplanting their highways into avenues of trees, useful as well as ornamental.

The BLACK WALNUT.—This is a fine tree, with spreading branches and broad round head. The bark is rough and furrowed, and darker than that of the butternut tree. As an object of beauty for the adornment of our pleasure grounds, this tree can not be too highly esteemed.

When the Black Walnut stands alone, on a fertile soil, it becomes a truly majestic tree ; its erect stem and the breadth of shade, its abundant, soft, and luxuri-

ant foliage, recommend it as an ornamental shade tree. "When full grown," said the lamented Mr. Downing, "it is scarcely inferior in the boldness of its ramifications, or the amplitude of its head, to the Oak or the Chestnut, and what it lacks in spirited outline when compared with other trees, is fully compensated, in our estimation, by its superb and heavy masses of foliage, which catch and throw off the broad lights and shadows in the finest manner."

The Black Walnut unites many desirable qualities in a tree—beauty, gracefulness and richness of foliage in every period of its growth. It is perfectly adapted to our climate. Its growth from the seed is certain and rapid. It is admirably adapted to extensive lawns, parks, and plantations, where there is no want of room for the attainment for its full size and fair proportions. Its rapid growth and umbraegeous foliage also recommend it for public streets and avenues. The flowers expand in May, but its fruit is not ripe until October, when it presents a beautiful appearance. It is very prolific: twenty bushels of nuts are not an uncommon yield of one tree.

The wood of the Black Walnut is of a dark violet purple color, becoming deeper and almost black with age. It is valuable for its fineness of grain, tenacity, hardness, strength, and durability; it is beautifully shaded, and admits of a fine polish, and is elegant for ornament.

[We are glad to know that Mr. Bement has taken up his favorite subject again. It is full of rich material.—ED.]

AGRICULTURAL AND HORTICULTURAL LIBRARIES.

BY COGNOSCO.

If the past should be reviewed by the Horticultural and Agricultural press, they could not fail to draw a very gratifying conclusion from the results of their labors. Although it is scarcely more than a generation since the first periodical devoted to these subjects was established, yet the progress that has been made is such as to effectually silence those limited brains, who have rung all the derisive changes upon the subject of book culture and improvement. It is only necessary to compare these interests at the present day, with their condition twenty-five years ago, to mark the improvement, and then credit the press for the liberal and general diffusion of knowledge on the subject of Agriculture and Horticulture.

When we meet now with an intelligent and successful cultivator of the soil, who is fully alive to all the improvements of the present age, we must necessarily set him down as one who reads and thinks, who takes many of the best issues of those papers devoted to his interests, and who has collected a library of Agricultural and Horticultural works, which for general use and reference have become invaluable.

It is hardly necessary to argue in favor of the value of an Agricultural book or paper, and the day has gone by for a man of intelligence to risk his reputation in underrating their influence. Past history will contradict any assertions against their importance, for the progress of such pursuits has been to a great extent due to their exertions. That we as a people have made rapid strides in these departments of our country's greatness, no one can question; and that by interchanging facts and sustaining the mediums for the diffusion of knowledge, we shall continue to improve, is equally beyond doubt.

That the value of such publications is becoming every day more highly appreciated, is apparent from the fact of their increased demand. The history of the rise and progress of Agriculture, Horticulture, Pomology, Landscape Gardening, Rural Architecture, etc., as published from year to year, has now become as rare books among the libraries of our prominent farmers and country gentlemen. The circulation during the early periods of our now leading publications of this class, was small compared with that at the present time, and full files of many of them have long since disappeared from first hands, and are ranked upon the book shelves of those who know well their value. It is only within a week that we offered three times the original price for a full series of one of the leading journals, and were politely told that if we should double our offer we could not have it.

There is a great satisfaction, while taking such publications, to feel that their value does not depreciate, and that when we have read and profited by their contents, they have still a price. We envy those who are so fortunate as to possess complete sets of such publications as the *Cultivator*, the "Country Gentleman," "Hovey's Magazine," and the "Horticulturist."

A library of Agricultural and Horticultural works is what every one who lives in the country should possess, and the regular issues of such journals form annual volumes of great value. It is not uncommon for many of those who occupy large estates to take duplicate copies for the gardener's and farmer's houses, and which become permanently attached to them, though the inmates may change. The result is always good, for men will read when they have an opportunity; and if they read they will improve. An investment of \$15 or \$20 per annum in the leading periodicals on these subjects should not fail to return many times their value.

We take great pride in possessing one of the most extensive Agricultural and Horticultural libraries in the country, and we look upon the bound volumes of this periodical literature as a profitable investment. They pay us their full price every year as books of reference and instruction, and their actual cash valuation improves annually more than the legal rate of interest. If our whole library were put under the hammer, we will venture to say that the back volumes of the Agricultural and Horticultural periodicals would bring their cash cost and interest. We esteem ourselves fortunate in having an early collection; but were we to commence life again to-day, we should at once preserve files of every leading

journal on these subjects; there are golden dollars in some of the pages, as by experience we know that our investment has come back many fold, and is still paying us a rich return.

[This is a very important and very interesting subject, and we hope Cognosco will follow it up. It is a fact apparent to every observer, that the best horticulturists and the best farmers are always diligent readers. A knowledge of new plants and improved modes of culture can only be acquired by reading, since the press is now the only medium by which such knowledge is communicated to the world. There may be an occasional exception, and there may be, also, cases where such knowledge is obtained orally at second hand; but the general rule nevertheless remains true. There are parties who are willing to forego all the pleasures of reading, but they are greatly to be commiserated. No man is fit to be intrusted with any important position who is not a diligent reader in his profession. Besides all this, we are all of us under obligations to fit ourselves for the moral and social duties of life: no man has a right to degrade his human nature. We shall recur to this subject again.—Ed.]

A CONSUMER'S VIEW OF THE "WHICH IS THE BEST GRAPE?" QUESTION.

BY BROOKLYN.

This seems to be a leading topic now-a-days. I beg to protest against the style that has been adopted by some of our zealous cultivators. I do not object to their saying all they think of their own pet variety, but I do to their running down every thing else.

A Philadelphia gentleman lately stated at one of our Society meetings, that in that centre of the world certain ordinary varieties were considered "unfit for human food." Myself and family having been in the habit of using them by the peck, and never having experienced any of the frightful effects depicted as produced by them, I beg to differ from him, and to say that I like these Pariahs, and do not acknowledge his right to impeach my judgment for doing so. A Jew may think me a Goth because I like pork, an Englishman because I don't like mutton, and the gentleman from Philadelphia because I relish other grapes than Black Hamburgs; but that is merely their opinion. I think individual taste has its rights in this matter.

I have nothing to say against Black Hamburgs—far from it—but would rather take home twenty pounds of *ripe, well-grown* Isbellas or Catawbas, and let the youngsters have a feast, than a couple of bunches of the others to squabble over. True, I might take the twenty pounds of Hamburgs—if?—I could afford it. If I can not, must I do without grapes? The gentleman might as well tell me that if

I can not afford superfine black I must go without breeches. He put me in mind of the princess, who thought the people were very foolish to starve to death: “rather than do that she would have eaten dry bread.” The idea that any one might not be able to invest in a liberal supply of Black Hamburgs never seemed to strike him; he spoke with contempt of these common grapes *because* they were sold so low. Wishing to see *good* fruit of all kinds so cheap that the laboring classes can freely indulge in it, and believing, as I do, that the raising it for this plebeian market will pay as well as other farm crops, I can not enter into his feelings. I go for elevating the cultivator of the soil as much as possible, but do not conceive that the time has yet arrived to put even only Pennsylvania under glass. Believe, if I had an abundance of many varieties, I should partake of all in turn. Roast quail is more delicate than roast beef: ergo, beef is not worth eating. Trout is more recherché than cod: codfish—avaunt.

[The gentleman from Philadelphia certainly did take very decided ground against our native grapes, and anathematized them in round, hearty terms, not very palatable to those accustomed to eating Isabellas and Catawbas. We endeavored at the time to present some facts tending to modify his views, and think we partially succeeded. We predict, however, that when he shall have become better acquainted with our native grapes in their best condition, he will commend them in as hearty terms as he now condemns them. Unripe fruit of all kinds we condemn; but *ripe* grapes, the native equally with the foreign, we esteem pre-eminently conducive to health: let all eat them as freely as they may. We think we express the opinion of all who have eaten grapes freely when we say, that we never feel better than when we eat four or five pounds of natives daily. Some of the effects described by our friend from Philadelphia may possibly result from eating *unripe* grapes, but they would follow in the case of the foreign as surely as in that of the native. Now native grapes are frequently gathered and eaten when scarcely more than half ripe; foreign grapes are very seldom taken from the vine until they are quite ripe; hence our friend may have sometimes seen ill effects from eating the former; but this would hardly warrant his deduction, that native grapes are not fit to be eaten, any more than that foreign grapes are not fit to be eaten, since the same effects would follow from eating unripe foreign grapes. We have been in the habit of eating freely of both kinds, and candor compels us to say that both are refreshing and conducive to health: Muscats and Hamburgs, Delawares and Dianas, are fit even for princes to eat, one equally with the other. The native, however, will always be the grape for the masses, and our wish is, that all may be enabled to partake of it freely.—Ed.]



FRUIT TREES IN POTS:

THEIR CULTURE AND MANAGEMENT ADAPTED TO THE CLIMATE OF AMERICA.—TO WHICH IS ADDED
DIRECTIONS FOR THE CONSTRUCTION OF CHEAP HOUSES FOR FRUITING THE SAME.

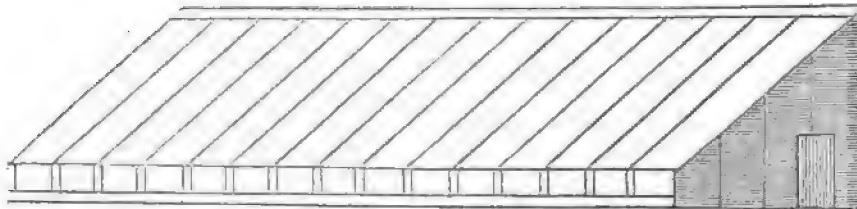
BY DR. GEO. PEPPER NORRIS, WILMINGTON, DELAWARE.

THAT the culture of fruit trees in pots is destined to become popular in America, it requires no far-seeing mind to discern. In a climate remarkable for its sudden changes from heat to cold, a method by which the tender blossoms may be guarded against untimely checks, is sure to meet with many advocates. This system is now creating a furor in England, where such houses have been experimented with during the last ten years, and the increasing demand for them more clearly proves than any other demonstration, their merits and advantages. In this country the probabilities are, that they will not only be ornaments to the grounds of the wealthy, but also a source of revenue to the market gardener; the cheapness with which the necessary structures can be erected, and the simplicity they can be managed with, will do much to popularize the taste for this mode of gardening. Add to this, the facts of the now almost complete abandonment of the apricot, plum, and nectarine, on account of the ravages of the curculio, and the growing fondness of the American people for rural homes, and we think we are justified in predicting almost a mania for this species of horticulture. The latter reason alone will do much for it. American tastes are rapidly becoming identified with country life, and slowly but surely we are following in the footsteps of our English ancestors. Persons who, some years since, were satisfied with a few weeks' residence in the country, now pass as many months; and many whose pursuits have allowed them, now make their permanent homes where they formerly were temporary sojourners. Additional comforts have had much to do with effecting this change. Gas and water were formerly only to be had by the citizens of the towns. The introduction of rams, windmills, and other popular modes of raising water in country houses, has put many of their inhabitants in possession of superior water accommodations over their city friends. No more are the winter evenings in rural homes made dismal by the absence of the cheerful illuminating rays of the town gas. The facilities by which the towns can now be reached have also had a considerable share in hastening the exodus: transient travellers are continually on the increase.

These are among the varied inducements that are making country homes yearly more sought after. It is to this class of inhabitants, the owners of small estates in the neighborhood of the cities, that the claims of this method of fruit culture present themselves. Any one living on half an acre of ground can have put up one of these glass-roofed structures, in which can be as well ripened a crop of fruits as in the most costly crystal palace. To the renter, pot culture presents a mode of growing fruits by which, should he see fit to change his residence on a few hours' notice, he can remove his house and trees, and in his new home at the

proper season can gather the luscious fruits. Many who have hitherto been deterred from planting fruit trees on account of the license allowed by law to depredators, now that they have a method by which their treasures may be guarded, will embark in this new system. The retiring citizen need not now wait a lifetime for his fruit crop, but may reasonably hope to be permitted to gather of the golden fruit which he directs his gardener to have properly cared for.

The Glass-Roofed Fruit Shed can be constructed in a very simple manner, at a very small cost. The form may vary to suit the taste of the proprietor. We give our preference to the lean-to, as being more easily managed and more simple in its construction. It may be of any length desired; but as regards height, it will have to be borne in mind that it is necessary that the leaves should be near the glass; therefore the proposed dimensions should be taken, as they will give more advantages at the same money than any other: they will be seen to be very nearly the same recommended by Mr. Rivers in his admirable treatise. Should a shed fifty feet long be desired, we mark out the ground fifty feet by thirteen wide, designing to construct a sunk walk in the centre two feet wide and one foot deep, thus leaving a border on each side of five feet six inches, in which the potted trees are to be plunged. The back row of posts should be of cedar or chestnut, eleven feet long, and sunk three feet at least in the ground, and placed five feet apart. If the part intended to be put in the soil is previously well charred, the durability of the posts will be thereby increased. The front row of posts should be in a parallel line, and thirteen feet from the back ones; should be put the same distance in the ground, and allowed to project three feet above the surface. The posts at each end for the doors will be all the posts required. Before planting, the outside of each should be squared. On top of the front and back rows, plates for the rafters to rest on must be firmly spiked. Hemlock three by fours make substantial

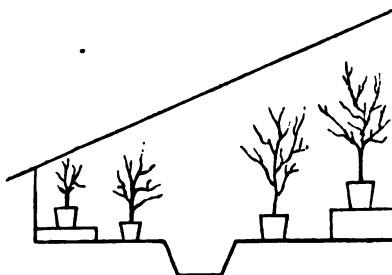


plates. To the back, front, and side posts may be nailed, plowed and grooved flooring boards; they make a good back, and the joints are sufficiently open to admit some air. The roof may be made of two by four hemlock rafters placed five feet apart, firmly braced to the back and front plates, having between them white pine strips two inches by one inch, on each of which, as well as in the rafters, grooves must be plowed to let the glass rest on. These strips can

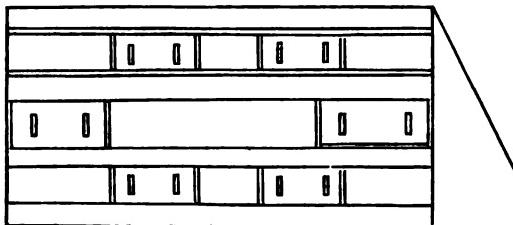
be very cheaply got out at any saw-mill. Ten by twelve fourth quality glass, lapped over half an inch, makes a tight roof of good appearance. Such a shed can be constructed by any person at a very small cost. If it is desired to build cheaply, avoid carpenters : between the cutting of the wood to waste, half working, and general ignorance, a large bill is made in a short time. If money be not an object with the builder, more handsomely finished houses may be had, but not better adapted for the purpose required.

To build cheaply, get the posts out of the woods in rough days in winter ; have them charred, squared, and ready to go into the ground whenever weather permits. A short time only is required to spike the wall plates on to the front and back rows of posts, and nail on the flooring boards ; being jointed, they fit readily, and present a good appearance externally. Your rafters and pine strips come from the steam sash-shop all ready for the glass ; the house can be glazed during mild days in winter. A half sash door, for each end, can be cheaply had, or one of rough construction will answer equally as well and be cheaper.

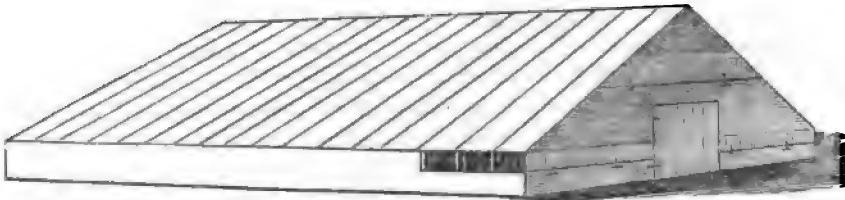
Ventilators.—It is indispensable, to grow fine fruits in pots under glass, that in addition to an unclouded roof, there should be ample ventilation ; and here it is that fruit houses differ from cold graperies. When it would be proper and suitable in a cold grapery to have every crevice closed, in the fruit house half the shutters at least should be open. In the front wall cut out shutters four feet long by a foot and a half deep ; ten shutters of these dimensions will be required in a house fifty feet long. In the back there should be at least six pairs of ventilating shutters ; they may be made to slide in grooves, or let down by hinges, and should be at least three feet long by one foot wide. Over the openings thus made, both in the front and back wall, should be placed a thin gauze wire netting, the thinner the better, so that when the shutters are opened, a protection will be afforded against insects. Unless this netting is made very thin, it will be of no use, and should be got for the purpose ; the holes should be as small as in the gauze netting used to protect beds against musquitos. No obstacle is thus offered to the free ingress of air, and insects are effectually excluded. My own fruit house is forty feet long by thirteen wide, with cedar posts five feet apart, and three feet in the ground. On top of the front and back row of posts rest the wall plates. The rafters are five feet apart, between which are the white pine strips. On the rafters and on the strips are furrowed grooves, on which the glass, which is 10 by 12 fourth quality, rests ; the back, front, and sides are made by nailing inch and a quarter flooring boards on the posts. In the front, ventilators three feet long by a foot and a half wide are cut ; and in the back, three pairs of ventilating shutters work in grooves. The back shutters are three feet long by one foot wide ; two are near the roof, two in the middle, two about two feet from the ground : exact distances are not essential. In addition to my three pairs of shutters I have knocked off the two upper boards, and thus made a shutter on hinges running the whole length of the building, all of which will be required in our July weather. I have two chest-



nut posts on each end of my house, on which are hung the two doors, the one inclining to the south being glazed entirely. The walk in the centre is two feet wide, and eighteen inches deep ; on the ground is a wooden lattice work ; the front border is five feet wide ; the back divided into two, the furthest back being raised.



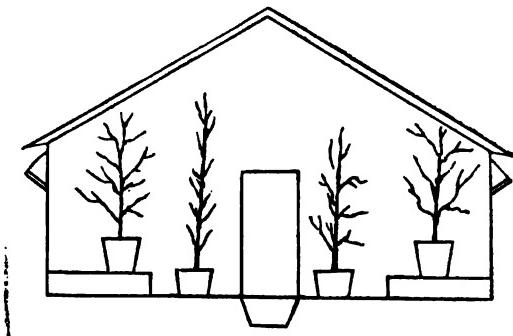
If preferred, the form of the house may be span-roofed, although we give our decided preference to the lean-to, believing it in our climate to be best suited to the wants of the potted tree. The span-roofed house may be thirty feet long, four feet high at the side walls, middle eight feet, and four feet wide—the borders on the



right and left of the walk may be divided into two ; the front one raised nine inches, and supported by a plank or sod, or the walk may be sunk and the border undivided.

The trees may be potted any time the weather is suitable, between October and April. The size of the pots will in a measure be determined by the kind of trees :

for Apricots and Plums small pots will answer, while the Peach and Nectarine, being of coarse growth, will require a larger pot. The first size flower pots are fourteen inches, and are \$2 40 per dozen, or 25 cents singly; second size, twelve-inch, \$2 00 per dozen; third, eleven-inch, \$1 50 per dozen; fourth, ten-inch, \$1 20 per dozen. It is not desirable to use a smaller size than the last named. The apertures in the bottom of the pots will require to be enlarged to three or four inches; this may be very simply done with a light hammer. Where potting a large number of trees is in contemplation, the pots should be bespoken and made with a large hole in the bottom. On the hole in the bottom of the pot place some old broken crocks, pieces of broken flower pots, tiles, old broken china, or small pieces of brick sufficient to prevent the escape of the soil; on top of this put either the most lumpy part of the compost heap, or, what is preferable, bits of charcoal; a couple of handfuls to each pot will be needed. Now put in several handfuls of the compost, ramming the same well down; next the tree,



having first carefully shortened the roots; then more soil, ramming well down; do not plant too deeply; especially avoid placing the tree deeper than when growing in the nursery. Do not entirely fill the pot with the compost, as it is desirable that, after settling, the pot should not be entirely filled with earth, otherwise needless trouble will be experienced in watering. Having pressed the earth firmly around the roots, with a sharp knife, shorten the tree to at least three feet from the surface of the pot, at the same time shortening well in every branch; on no account cut off a branch entire, unless very near the collar. Allow the lower branches to be the longest, and diminish the length of each as the top is approached: the topmost branches should not be over two inches, while the lower ones may be a couple of feet long. No specified rule need be followed, only impress on the novice the importance of shortening the top well in, and if thrifty, vigorous trees are desired, severe pruning must be insisted on. When we take into consideration the severe mutilation the roots undergo when transformed into the narrow spaces of an eleven-inch pot, the sharp cutting will be justi-

fied. A suitable compost for young pot-trees may be made by thoroughly incorporating with the top soil of an old pasture field, well rotted manure, wood ashes, leaf mould, and some road sand or pulverized charcoal; any thing that will tend to lighten and make pervious the soil seems suitable. The materials should be suffered to lie in a heap for a time with an occasional turning.

[The Doctor has entered upon orchard house culture with much enthusiasm, and we are greatly indebted to him for an opportunity of laying before our readers the results of his experience. The length of his article precludes some suggestions we should like to make. We will say here, however, that we should prefer a lap of only one-eighth instead of half an inch in the glass; besides other important advantages, the danger of breakage is much less. We hope the Doctor will continue the subject, and give us an additional chapter on the treatment of the trees.
—ED.]

FACTS AND COMMENTS ON GRAPE CULTURE.

BY WILLIAM A. WOODWARD, MORTONVILLE, ORANGE CO., N. Y.

MR. EDITOR: In your article on Grape Culture, No. VII., I am pleased to see the Delaware rated as No. 1; that is doubtless the right thing in the right place. With my present knowledge and experience, I should have named the Hartford Prolific No. 3, for the reason that *it is earlier*, and in many respects equal to the Concord. The Hartford Prolific ripened with me on the 6th of September this year; was then sweet and delicate; and, in the absence of other grapes which ripen ten to fourteen days later, is a variety *worthy of general cultivation*; besides, it is hardy, the temperature of twenty-one degrees below zero having had no deleterious effect upon it the past winter. When the Hartford Prolific, like the Delaware, shall become well known, and cultivated by every amateur and vineyardist, they will be known as the wine-grapes of our country; the delightful native aroma of the former will give a bouquet to its wine that is now but little known, is much sought after, and will be appreciated. Query? why not give us an essay now and then on wine-making? or do you consider it out of the range of Horticulture? The great business of grape-growing will ultimately merge into wine-making; somebody must and will make it; perhaps not the one who raises the fruit, but the fruit itself will be pressed, fermented, refined, bottled, and—drank. I hope to see the day when there will be but little sale for grapes for the table; for I look forward with some degree of satisfaction to the time when every man will raise his own grapes for that purpose; when every city and village lot will have not only its own single vines, but its grape-house; when it shall become a source of pleasure to every merchant, professional man,

mechanic, and laborer, to spend half an hour every day in his grapery, which shall also yield him fourfold for his pains, in delicious, healthy fruit for his family. Why not call public attention to it? A man may be a Horticulturist even if he has but twenty-five feet square to practice on. You once gave us the experience of a gentleman who showed what could be done on nine feet of ground. Twenty-five feet square would permit a grape-house 12 by 25 feet, and leave room for clothes-drying—which seems now to be the only use for a city yard—and admit of a dozen or twenty hardy native grape-vines on the borders besides, with a very little expense.

You think the Diana would be entitled to position No. 2, were the practice of covering the vines common. Let it become common; the sooner the better; advise every body to practice it; to cover all their vines, the hardy as well as the tender ones. It is easily done, and it pays. The vine starts earlier in the spring, it ripens both wood and fruit earlier in the fall, and insures the certainty that it will not be killed if the following winter should become, like the last one, the temperature of "Greenland's icy mountains." It is but little labor to cover a grape-vine, and whole vineyards may be covered at a percentage on the product of the ensuing season. Strawberries and Raspberries are covered as a matter of course, and why not grapes? Does the cultivator of the latter claim exemption from the command to earn his bread by the sweat of his brow? Then cover the Diana, and call it No. 4, not 2, for its liability to rot, like its parent the Catawba, in wet seasons, is its drawback. The Hartford Prolific has an objection for a m'aret grape, viz., dropping its fruit when ripe. So the Delaware is too small to fill the mouth, and when enough berries are taken for this purpose the accumulation of seeds is an inconvenience. It may be a long time before we get a faultless native grape. While waiting in full faith for that millennium in Horticulture, let us select the best we have, and advise the public to give them a fair trial. The Isabella this season has generally ripened prematurely, twenty-five days earlier than last year. I think this is an effect of the exposure last winter. The Woodward grape ripened 7th September under very unfavorable treatment; that is, a desire on my part to grow wood instead of fruit. I have no doubt it would ripen a week earlier under good culture. I adopt your opinion that it is an Isabella seedling. In regard to its hardiness, a vine under the mountain's shade was exposed to $29\frac{1}{2}$ ° below zero; another, in my garden, to 21 ° below zero, both of which are uninjured, and have grown luxuriantly since.

[It is a great point to get started right: we believe we have placed the Delaware just where it belongs, and no person need fear planting it largely. We think we have done no more than our duty required in bringing it boldly up to a front rank: the future will more than confirm all we have said of it. On the Hartford Prolific, however, you run quite too fast for us; you will have to come back and take another start. At present we can not place the Hartford Prolific

even No. 5 for general cultivation. It is not sufficiently good to begin with, and its habit of dropping its berries, if confirmed, will render it valueless for market purposes; and we must remember, too, that those who buy grapes do so to obtain something rich to enjoy. Let us wait a while yet before proceeding too far. If we had to decide the matter now, we should give a decided preference to the Creveling, as being nearly as early and much better, besides holding its berries firmly. We have probably given the Concord too prominent a place, simply because it is hardy. It, too, has a habit of dropping its berries when left till fully ripe, but not to the same extent as the Hartford Prolific. We have seen this so decidedly manifested this fall as to give us some uneasiness. For market purposes we must have grapes that will adhere to their peduncles; and the matter can not be looked after too closely. But you have fairly upset us in calling the Hartford Prolific a *wine* grape. We try to get every thing good out of every thing; but we can not get wine out of this grape, any more than we can get gold from the quartz rock of our mountains, because it is not in it; it won't come for us, and we wish you would tell us how you do it. You must bear in mind our position, that there must be no sugar added; in fact, there must be nothing but the pure, unadulterated juice of the grape: otherwise we shall call it a cordial, or something of that kind. The Delaware, Diana, Catawba, Lincoln, and others, will make good *pure wine*; the Isabella, Concord, Hartford Prolific, and others of the same class, will not; at least our best wine makers have tried it repeatedly, and never succeeded. We do not exactly know about the "day when there will be but little sale for grapes for the table;" it would be right enough if every man *could* grow his own grapes; but if you and we expect to live to see it, we might as well begin at once to prepare ourselves for the mantle of perpetual youth. May our shadows never be less!

To be serious again. We purpose giving some essays on wine making by a competent hand, and shall begin them soon. The subject comes entirely within our range. Your suggestions in regard to growing grapes in yards will not be lost on our readers.—Yes, we think Diana entitled to No. 2, and are disposed to place it there even without covering; with covering, there ought to be no hesitation about it. It will sometimes rot a little, especially when placed near the Catawba, but not more than the Isabella when grown by itself. In regard to the size of the Delaware, we should like to see it just a little larger; but we have seen berries three quarters of an inch in *diameter*. When it becomes well established, the berries will be quite large enough for the ladies; and as to the men, if they will have such big mouths, let them eat coarser grapes. You have made a great mistake in growing your Woodward grape for wood, but a common one. Two vines at least ought to have been grown exclusively for fruit, to show you better what it is. Try this next year.—ED.]

FACTS *VERSUS* FUSTIAN.

BY ALFRED CHAMBERLAIN, NEWPORT, R. I.

MR. EDITOR:—I was educated in England as a gardener, and have pursued that avocation for so many years, that I am so strongly attached to it, that it has almost become a part of my being; and when I came to this beautiful country I bore my tastes and love for Horticulture and its kindred arts in my heart, as almost all the treasure I possessed. So you will not be surprised that I cherish any successful results of varied experiments that I have made, and feel almost as strongly inclined to meet and repel gratuitous and ill-natured attacks upon my honest success in Horticulture, as I would if they were directed against me, and intended to impeach my private character and personal interests.

If I have endeavored, in any way or the smallest degree, to deceive the public, or misrepresent the nature or result of my labors as a gardener, I certainly deserve the severest censure and rebuke. But if I am innocent of any of these charges, and am only the unfortunate target for ill-aimed and worse-intentioned bilious invectives from jaundiced and diseased sources, with your courteous permission, I wish the public to understand it through your pages, and not dub me with the ambiguous knighthood of a "Second Barnum," because a "Close Observer" wishes to elaborate his literary attempts and scientific ignorance by perpetuating himself at my expense, and forcing me to wear his verdant mantle, which he so magnanimously attempts to cast upon my shoulders.

My premises are simply these. I claim to raise successfully different varieties of fruit, including Grapes, Pears, etc., in wire baskets. I have experimented for several years in this, and have recently fully accomplished my object and realized my expectations. During the last spring I obtained a patent from the United States government for my invention, which was only granted after a careful analysis of my theory, and investigation of its practical results. I had with me at Washington no personal or political influence, unless "A Careful Observer" can ingeniously pervert the vines and trees, growing luxuriantly in wire baskets and loaded with fruit, that I carried to the capital, and submitted to the examiners, into improper influences or skillfully disguised humbugs. I obtained my patent, and received the congratulations of the examiners and the Commissioner of Patents on the success of my novel experiment. I had the honor of presenting a grape-vine covered with choice fruit, growing *in a wire basket*, to the wife of the President of the United States, who expressed her kind thanks to me. My vines were also on exhibition some days at the office of Messrs. Munn & Co., my solicitors in Washington, and were examined and admired by a large number of persons, including the gardener of the White House and several well-known horticulturists. How far does this comport with the absurd statement of "A Close Observer," who says that he examined an apparently beautiful vine in a wire bas-

ket at the orchard-house of the Hon. William B. Lawrence, in Newport, which, at first, he imagined to be loaded with delicious fruit, but on a *close examination* he discovered that the bunches of Grapes were *tied on with bast matting!* It was a *very* "close observer," in ancient times, who said, "Do men gather grapes of thorns, or figs of thistles?" and as a practical man I submit it to the good sense of your readers whether they will believe, upon the unsupported and evidently prejudiced assertion of a comparatively unknown individual, that the scientific minds of the Commissioner of Patents and his examiners, the cultivated taste of Mrs. President Lincoln, and the impartial verdict in favor of my discovery by many intelligent men, could be so grossly and absurdly deceived as to believe that I cultivated healthy vines, loaded with perfect grapes, in wire baskets, when, in reality, they were all a despicable sham, and the vines were half dead for nutriment, and the bunches of fruit were tied on with bast.

I will trouble you, in this connection, to insert the following extract from the correspondence of the New York *Journal of Commerce*, of March 17th, 1861:

"We have taken a second look at the orchard-house of the Hon. Wm. B. Lawrence, the same that we described in your columns last summer. It reminded us of the sunny South, still sunny, despite the new Confederacy; and in it are gathered, from week to week, new potatoes, strawberries, pineapples, cucumbers, and of such delicacies as these the family have partaken since Christmas. So much for having Mr. Chamberlain, the genial gardener, with his round face, and as open as a sun-flower, (and no Barnum in his nature, as ungenerously suggested by some untraveled or ill-natured writer,) aided by such sense as the good Lord has given, together with vast quantities of glass and hot steam. And here are still those little hanging baskets from which Mr. Chamberlain grows fine peaches, pears, and grapes. That writer suggests that there must be some deception here. He would never have broached that theory if he had but once looked into Mr. C.'s face. If that is not enough, look at the baskets, and see for yourselves; handle them, and you will doubt no more. In the line of novelty and genuine interest there is nothing in Newport, at this time, to be compared with this orchard-house, and we are under obligations to the proprietor again for his politeness in permitting us to enjoy that rich scene of Southern fruits and vegetation amid this rugged climate."

The well-known character of the paper from which the foregoing extract is taken will be sufficient evidence of the ability and truthfulness of the writer, without my adding that he is a gentleman of fully as keen powers of analysis and examination as the self-constituted "Close Observer." Although I am under great obligations to you, Mr. Editor, for the unvarying courtesy with which I have been treated by you personally, yet, since your "Close Observer" is the aggressor, and is somewhat inclined to exercise his decidedly embryo powers of

would-be wit at my expense, (although a gardener myself,) I trust you will permit me to refer, for a moment, to the ambiguous literary taste of your contributor, and to inquire whether the English language, tortured under the *harrow* of ignorance, can be justly considered *cultivated*, in the legitimate acceptation of the word.

The opening paragraph in his article in your January issue deserves to be duplicated as a rhetorical curiosity. It reads as follows: "Surrounded by a cloud of tobacco-smoke, sir, strong enough to suffocate any of the fair sex in the metropolis, I *set* down and give vent to my feelings upon a subject that has filled my thoughts for some time, and now, like a bird that has escaped from its cage, gives evidence of its satisfaction by lifting its voice." Is not this patentable for its



"originality?" Truly, "out of his own mouth" will we "convict him." His ideas, by his own admission, are smoke-born, and necessarily, therefore, beclouded and befogged. What kind of a cage has this individual escaped from, that he can now *sing-sing* all the day long? Does a "Close Observer" know that rusty wit, illy discharged, is "more dangerous at the breech than the muzzle?" Has he ever read Emerson's warning, couched in floral similes, to ignorant aspirants?

"The bright Rhododendron
Flames up to the sky;
Appropriate pig-weed
Creeps under the sty."

For this has enabled wiser and better men than he to discover their true running

level. Has your contributor, I would further query, adopted the sobriquet of "Close Observer," because he has escaped from some cage of *close* confinement in regions to polite ears unknown?

In conclusion, he says, "What we want are facts." These are what Mr. Gradgrind clamored for in the story, and being disposed to dispute every thing of which he had not been "a close observer," in accordance with his theory, doubted his own paternity. Now we have endeavored to supply facts, and if any of your readers doubt my statements, I should be pleased to receive them at the orchard-house in Newport, R. I., and exhibit to them the vines and fruits growing in the wire baskets. In one of your articles you say, that if this is a deception the Hon. William B. Lawrence should not lend it his influence. I am permitted by that gentleman to refer to him for the truth and accuracy of my representations, as he is the proprietor of the beautiful and admirably-arranged gardens and conservatories which are under my supervision.

Since "seeing" was not "believing" to a "Close Observer," I will say, that when he visited the orchard-house, upon one vine growing in a wire basket there was *one bunch of grapes tied up with bast*. This was a plant that I had preserved, exhibited some time, which had been drawn and lithographed, and of which I forward you a sketch, if you please to use it. These grapes were over ripe, and I feared would fall from their weight, and I therefore secured them, *although they were attached to the vine by the natural stem*. And out of this your contributor has created his "bugbear," founded, perhaps, upon that varied experience in morals that induces some men to believe that nothing and nobody can be appropriately pendulous unless they are "hung by the neck."

[Mr. Chamberlain here states distinctly enough what he has done with his wire baskets; but at the close of his vindication against Mr. Carmiencke he has unfortunately lost his temper. The provocation was no doubt strong, but this style of criticism is in bad taste on both sides, and, in our judgment, out of place in a magazine like this. Both have now said sharp things of each other, quite too personal, and hereafter whatever is said must be confined to the merits of the wire basket. We desire to extend every possible courtesy to all our correspondents, and in return we think they should seek to render our position as pleasant as may be. We insert the engraving sent, in order to give our readers some idea of how the baskets look.—ED.]

THE NORTHUMBERLAND FILL-BASKET RASPBERRY.

(See *Frontispiece*.)

We present for a frontispiece, this month, the Northumberland Fill-basket Raspberry, from a drawing made by a lady artist. This Raspberry is sometimes

called the Northumberland, sometimes the Fill-basket, but its full name is the one at the head of this article. It is a comparatively new variety here, and ranks among the hardiest. The canes are short and stout; the fruit is firm-fleshed, of ing. We have fruited it only one season, but consider it desirable, since we have found it to do well without covering, though it may possibly need protection fur-good size, and good quality; it is productive, and continues some time in bear-ther North. Mr. Ferris, of Throgg's Neck, has grown it two or three years, also without covering.

BROOKLYN HORTICULTURAL SOCIETY.—CONVERSATIONAL MEETING.

THE regular Conversational Meeting was held on Tuesday evening, Oct. 1, President Degrauw in the chair. The meeting was opened by a short lecture from Mr. P. B. Mead, on the flowers on the table. Dahlia "*Mrs. Burgess*," a seedling, color the nearest approach he had seen to a blue Dahlia; a bluish lilac, almost a globe. It is a flower of great substance; it has the power of throwing out petals, and preserving its form a long time; centre low, but very good. Thinks it will not produce much seed. He concluded by saying that Mrs. Burgess was a good deal handsomer than Mr. Burgess.

Two new flowers from Mr. Weir, "*Tritoma uvaria*," and "*Tritoma uvaria grandiflora*," a seedling of the first. He had seen 16 inches of flowers when fully opened. The last is a great improvement on the first.

"*Bilbergia thyrsoides*," from Mr. Hamlyn, has a military look, and will please the ladies, who are fond of military men.

Seedling Antirrhinums, from Mr. Burgess, that do him a great deal of credit; some very fine; one with white throat, a great beauty.

Daphne cneorum, from Mr. Burgess. We shall have to call it a perpetual bloomer, having seen it here at every meeting; have heretofore spoken highly of it, and recommend it again for the parlor, greenhouse, and garden.

Pears from Mr. Chorlton. Duchesse d'Angoulême and Beurré Bosc, very fine and large.

The presentation of prizes awarded at the fall exhibition was then made by Mr. Mead. He remarked that the influence of public exhibitions never ceases, and they are fortunate who are successful in carrying away objects like these, to hand down to their children. This large pitcher is awarded to Messrs. Elwanger & Barry, of Rochester, for a fine display of fruit; if they were here it would be a pleasing duty to pay them a well-deserved compliment.

This pitcher is awarded to Mr. Andrew Bridgeman, of New York, for a large and beautiful collection of plants; can not say less than that he made one of the finest shows in either Brooklyn or New York; was his first exhibition in Brook-

lyn, but hoped it would not be his last. Give this cup to your family as an heir-loom.

Mr. Bridgeman, in answer, stated that for a number of years back he had been either a manager or member of the committee of arrangements at the several exhibitions that had occurred in the city of New York, and did not think it would be considered just for him to compete, in that capacity, for premiums. He had and must again express his thanks for the manner in which he had been received at the Conversational Meetings and the Exhibition. More interest was shown than he had ever seen; far more than at the New York exhibitions. Looked upon this Society as a great advantage to the community and the trade in general.

Mr. Mead.—This cup was awarded to Mr. A. G. Burgess, of East New York, for displays of cut flowers of superior character at the Conversational Meetings. Mr. Mead stated that it afforded him a peculiar pleasure to attend these meetings; the gardeners bring flowers to exhibit, and prepare surprises for the ladies at the close. Take the cup, Mr. Burgess; may it always be brimful of happiness. If you put wine in it, do not let it be stronger than yourself; and if it should happen to get in your head, be very careful that it never gets in your boots. (Laughter.)

This cup was awarded to Mr. Messelberg, of Williamsburg, for choice collections of flowers, exhibited at the Conversational Meetings. Did not think any caution necessary after what had been said, but take the cup home with you, and let it always be an incentive to good thoughts and an ambition to do well.

The cup for Mr. John Humphreys, of Brooklyn, for the same, was given in charge of the Secretary, he being too sick to be present.

We have left to the last what, in some respects, ought to be called the best. These prizes, a cream-jug and salver, one from the New York Society, and the other from the Brooklyn Society, both for ornamental designs, were awarded to an intelligent young lady, of refined taste, whose name it would not do to mention, as she was very modest. Ladies have a higher appreciation of color, harmony, and grouping, than men, and make much better bouquets.

Will now take up the subject of the evening, the CULTURE OF THE GRAPE. Believe the ladies can grow better grapes than the men, or, at any rate, they taste better from a lady's hand; thinks that Dr. Houghton will modify his opinions on the native grape. What he would hear here to-night would tend to modify his opinions. Mr. Bridgeman said he would prefer to make his remarks in Dr. Houghton's presence; don't like to speak behind his back. His Philadelphia logic we can not understand about the cultivation of the native grape in and around Philadelphia, which is a failure except in city yards. Dr. Houghton has been engaged three years in cultivating native grapes, and says he does not think them fit to eat; has spent some thousands of dollars, and yet is not willing to give them up, as he asks some questions about transplanting, yet will not encour-

age the native grape, as he says the foreign grape is superior ; forgets the foreign grape is not accessible to all ; might as well discourage the growth of cotton, as the wealthy can buy linen and silk. Although we admit the foreign grape is a luxury, is it right we should discourage the culture of the native grape when it is a pleasure and comfort to so many ? Dr. Houghton's remarks were made before several societies, and he would like to have his arguments refuted ; will return to this subject at a future meeting ; is not well enough to proceed.

Mr. Mead said the subject was changed at last meeting from a systematic plan and we have some reason to-night to depart from the rule to hear Dr Grant. Proposed to Dr. Grant the following questions :

1. What are the characteristics needed in a native grape, to constitute it *best* as a fruit for the table ?
2. Are these characteristics inconsistent with those needed for the best grape for wine ?
3. What is the comparative value of the native and foreign grape as objects of culture for profit ?
4. Is it your opinion that the native grape can be profitably grown for the purpose of wine-making ?
5. Is not thorough preparation of the soil more economical than poor preparation ?
6. Is not some good system of training indispensable to the continued productiveness and longevity of the vine ?
7. Can grapes be grown successfully in our city yards, as a general thing ? If so, what are the necessary conditions as to exposure, etc. ?

These questions, Mr. President, just proposed by our friend the Editor, have opened windows into all of the passages that lead to the grand hall of the vine ; and, if we explore them carefully by aid of the light which he has held up to us, we shall obtain sufficient knowledge of all that pertains to it to resolve the important questions that are now perplexing the minds of many who are much interested in the subject.

It is a matter in which every one has a real interest, whether he now feels it or not, and deserves a much more extensive examination than the present opportunity will enable us to give.

Question 1st. "What are the characteristics needed in a Native Grape to constitute it "best" as a fruit for the table ?"

Those who have eaten grapes no better than the Isabella, or imperfectly-ripened Catawba, have taken grapes as we take the lot of life—a mingling of good and ill, in which, from untoward circumstances, the ill often appears to predominate ; at least it is so to those who look for unmixed enjoyment.

Persons who have enjoyed the foreign kinds in their perfection, freely, for a length of time, have generally lost the ability to perceive any good in these native kinds, and characterize them as "bad," or at least not attractive, by the very

small amount of good which they can discover, and refuse to partake of them, when, after repeated trial, they find nothing to enjoy, and much that offends.

But, in speaking of their own pure, rich grapes, they use terms of enthusiastic praise, that seem extravagant to those who are either quite ignorant of them, or only at rare intervals taste them, and that with the palate merely, and have not acquired the enlarged ability to enjoy, which, in its full developement, comes only from culture and use. They, under favoring circumstances, have apprehended the truth, and speak that which they do know; but this knowledge and enjoyment, with its accompanying elevation and refinement, very few can have, if they look only to foreign varieties for it. They are expensive luxuries, and must remain still exotic—beyond the reach of the many. And that this is no matter of regret we shall presently more fully see.

Now let us see what the vices and virtues of our ordinary natives are. If we critically examine a well-ripened Isabella in its best condition, we shall find in about two-thirds of its substance some vinous refreshment, and enough sugar to make it palatable. One third or more of the central portion is a mass of fibre, and crude, unripe, adhesive substance, consisting chiefly of citric acid. In eating, we pass this by the palate, before it is entirely divested of its mucilaginous and sugary coating, with the swiftness of a bullet in its flight, that it may not offend the taste while we enjoy the better part. The centre, besides the acid mass, includes the seeds within it, and this *theoretically* is not only injurious to the health, but extremely dangerous. Practically, extensive experience not only denies the truth of this theorizing, but teaches the direct contrary, and the unanimous opinion of those who have used the Isabella most abundantly in what is considered its fully ripened condition, is, I think, that it is not only not injurious, but even in most cases positively healthful. We must, of course, except rare idiosyncracies, which can take the grape only in its most refined and concentrated form without injury. The Isabella has, in my opinion, been a friend of humanity, and its mission, which I think nearly accomplished, must be regarded as one of beneficence.

The Catawba, in consequence of not ripening so early, has not been so extensively disseminated, nor so well known, but in all that constitutes goodness of quality, is a far better grape. The Isabella may be characterized as feeble flavored, that is, deficient in tartaric acid, which is the basis of high flavor in grapes. The Isabella is only *apparently* sugary, in consequence of offering but a moderate amount of acid for the sugar to overcome. In quantity of sugar it is much below the Catawba, as it is in tartaric acid. The ground work of high flavor being a large amount of acid overcome or qualified by a larger amount of grape sugar, much else is required to constitute a high degree of excellence; but with a deficiency of these it can not exist.

The Catawba contains a large proportion of both tartaric acid and sugar, when in best condition, and may be called, in contradistinction to the Isabella, a high flavored grape, and rich in the essentials of wine-making, which the Isabella is not.

The Catawba is deficient in delicacy and refinement required to give it high finish; but from it, in the climate in which it matures, wine of high character is made, which can not be said of Isabella. From the Isabella an effervescent or sparkling wine is made, but all of the Ohio sparkling wines are made by the addition of sugar, and with that they can be made of any grape, however poor in wine-making qualities.

As a grape for the table, when well-grown and ripened in a suitable climate, and particularly when produced in a long, very dry, hot season in this climate, the Catawba has a high degree of excellence, and in some important points greatly surpasses the feeble flavored (feeble characterized) kinds of Europe, that are held in high estimation there for the table. I speak of the various Sweetwaters, Royal Muscadines, and best of all this family, the renowned Golden Chasselas of France. But it must also be remarked, that these kinds, as grown here under glass, are very different from the same fruits grown in the open air in their own country. Here they are very greatly increased in size, but as greatly deteriorated in quality, so that they may be said to consist mainly of mucilage, sugar, and water, with a slight grape perfume, and are almost entirely devoid of the vinous refreshment which is the crowning excellence of the grape, and necessary to constitute it the fruit of fruits. Even in the best condition in their own country they lack the vital energy that is required for wine, and consequently can not meet the requirements which we demand for a "Best" table grape.

The Catawba may be characterized as sugary, vinous, and refreshing in an eminent degree, and not only wholesome, but positively healthful by its generous nourishing, tonic, and aperient qualities. In its best condition of excellence it is a great favorite with the sick, and particularly with those suffering from nervous and febrile debility.

But with all these excellences, by reason of great defects it falls far below our standard for best. Although less acrid and pungent in its skin than the Isabella, it is never entirely unexceptionable in this respect, nor is it ever altogether devoid of a crude acid centre, and always retains a degree of astringency, which, although not prominent unless carefully sought for, will not permit us to call it strictly pure in its vinous flavor; and when tried by the high standard which some of its own offspring afford, it is found to be much wanting in that fine assemblage of qualities that gives completeness and full satisfaction.

Let us now, for a few moments, take up for examination our favorite among the foreign kinds, the Grizzly Frontignan. Here we have a large amount of the acids that lie at the base of excellence in the grape overcome by a very large amount of sugar. (It should be observed that the amount of acids is large in this only in comparison with the foreign kinds before named; for the amount is not large compared with the Pineau or Reislings from which the Clos Vougeot, Hermitage, and Johannisberg wines are made.) But besides this it is rich in the harmonious mingling of all those innumerable qualities which chemistry has sought

in vain to detect or describe either in the grapes or in the wine. These constitute a grape of high, finished excellence, which I perhaps should say satisfies at all points, and offends in nothing. Its flesh is of equal consistence to the centre, and sufficiently tender, all equally flavored; and its skin is just thick enough and of sufficient strength to safely contain the abundant juice, which is little else than sugary wine. In this are joined in a very high degree, and perhaps equally, excellence for the table and for wine.

We are not ignorant of the fact that there are some who have never made the comparison in the true sense of the word, either from indifference or want of opportunity; and some, with whom nature or circumstances have been very parsimonious in their dealings in not having given them the power of perception to discriminate and enjoy, who have not discovered the great superiority of the Catawba over the Isabella.

To the careless and indifferent I would say, you are neglecting to accept good things that are offered, to the abridgment of your own enjoyment, and if we can induce you to give more attention to this matter, we shall receive your gratitude.

For those who have not the ability to perceive the finer qualities, and can only know things by their asperities and faults, we have a kind, compassionate feeling, but no words of dispute or argument, for we could not be understood by any ability with which we can address them. They can not comprehend what the term grape implies to those of fine and cultivated perceptions.

The Grizzly Frontignan, which we have placed in the class "best," will be regarded as strictly so—that is, without a superior by very many; but those who wish for more active refreshment will seek a grape that will make a rich dry wine rather than the sweet Muscatella, which is the produce of the Frontignans. This may be characterized as sweet and luscious, but not the wine that Paul would have recommended for the stomach's sake. Our own Diana makes a wine of the latter class, pure, rich, eminently refreshing and permanent, as if acting by large nourishment rather than by stimulation, as is the case with those marvellous Rhine wines, not followed by fever, headache, or depression as secondary effects, such as usually follow from sweet, exciting wines, which are drunk to please the palate merely, or the alcoholic, whose object is high excitement. As a grape for the table, pure, rich, and distinctively vinous and refreshing, the Diana, in its best condition, may be considered but little inferior to the Frontignans, only wanting in that uniform tenderness which should be considered indispensable in a perfect grape. In *vinous flavor* it is not, perhaps, equalled by any of the Frontignans, and its high character will be fully recognized in this respect when it becomes better known to the discriminating taste. In the matter of *delicate aroma*, however, the Frontignans may claim a superiority, though this is far from being the first point of excellence, as we have already indicated. The vinous grapes grow most upon the appetite by use, and delight not merely the palate, but the whole man. The Diana, both for the table and for wine, may be said to supply all the defects of the Catawba, to

those who have known nothing better, and all pronounce it an exceedingly good grape. Its full measure of goodness must not be expected from very young vines, and this is true of all of the vinous class.

I have adduced numerous examples to show that the elements to be considered in the solution of this question are not few or unimportant. I will cite one more native in which these elements of quality will be found assembled in an unequalled degree of excellence, resulting in nearly equal eminence both for wine and for the table. This is the Delaware, and one important circumstance in regard to it should be noted. It is remarkable for long keeping, and dries readily to raisins, retaining both sugar and vinous life remarkably; but one important portion of its excellence is extremely fugacious, and without care will scarcely be fully retained much more than twenty-four hours. This appears to be the living force by which its components are held in effective junction, and which, when present, affords a peculiar enjoyment beyond that of any other fruit. It was first noted by Professor Warring, who speaks of it as "thrilling him with delight."

If we require the superlative in quality, we must abate something in size, with, perhaps, a seeming exception of the Muscat of Alexandria; but this, when fully understood, does not amount to an exception, unless as it is grown by the aid of fire heat in a viney, and even then it lacks the vinous life which is indispensable.

In foreign grapes, *thinness* of skin is an important consideration, because the skin of those kinds is inseparable from the flesh; but in the Americans it separates readily, and is not eaten except in such kinds as Herbemont, Lincoln, Lenoir, and Elsingburg.

Our examination has been lengthened by a strong desire to know and to exhibit both the amount and kind of excellence that may be found in any grape, foreign or native, that we may be just and reasonable as well as comprehensive in stating the characteristics needed and to be expected in a native grape to constitute it "Best" as a fruit for the table.

According to our showing, it may be said, 1st. The skin must be without offensiveness in odor or acrid pungency; 2d. That it must be sweet and good to the centre; 3d. The elements which constitute its pure, rich, sugary, vinous flavor, must be so perfect in their balance and mingling that the more intimately the grape is known, the more full will be the enjoyment of flavor and refreshment.

Among the foreigners, this may be found in a good degree in the Black Hamburg, conjoined with great size, but in a superlative degree only in such small kinds as Reisling, etc., which are much smaller in bunch and berry than our own Delaware.

Question 2d.—"Are these characteristics inconsistent with those needed for the best grape for wine?"

The answer to this will require but very little consideration, for if our views of the former question are correct, the inference will be already present in the minds of those who have followed our course of remarks on grapes for the table.

Those generous qualities which render a grape most excellent for wine, are the same that we esteem most highly in a grape to be used as fruit; but it will not do to accept this as true universally, for some kinds possess all of the high properties for wine, and are lessened in value for the table by exceeding smallness of size as to bunch or berries—by disproportion of seeds or deficiency of juice, etc.

Pure wine may be said to be the true expression of the richness of the grape after all extraneous matters are laid aside, with as little change as possible to the principles as they exist in the grape and constitute its value. A little alcohol is necessarily formed; and it should be very little, for if much is formed, valuable principles are not only wasted, but the usefulness of the beverage greatly abridged, and often destroyed by the formation of a larger proportion of alcohol. Those remarkable wines of the Rhine, in which alcohol is but an unimportant accident, with more alcohol would be inadmissible where they now so gratefully refresh and strengthen, and soothe excitement. In this case, the mucilage and framework of the fruit only are taken away, and the fruit in its purity remains in the form of limpid wine, by which, through the stomach, the whole languid being is refreshed.

[We can not at present spare more space for these interesting proceedings. Having been furnished with the notes used by Dr. Grant, we are enabled to give his remarks in full, and shall continue them in our next.—ED.]

A WORD ABOUT FIGS.

BY R. S. S., SUNNYSIDE, N. J.

How few there are in this latitude who have ever eaten Figs, ripe and fresh from the tree! Or if, perchance, they have tasted a single specimen raised by dint of great care in a pot or tub, can scarcely credit the fact that Figs may be grown, even in this Northern latitude, not as exotics under glass, but as an outdoor fruit; and gathered, not in single specimens, but in generous abundance and luscious sweetness. Yet the fact is nevertheless so, and, under favorable circumstances, two crops may be realized in a single season.

The flavor of this fruit is not generally esteemed by those to whom it is a new sensation. The taste must be cultivated, and then it becomes as fascinating as the Tomato or the Olive. Who does not remember the unmitigated disgust which the first taste of the Tomato or Olive excited? How hard it was to be persuaded that they were fit food for mortal man, or even to be tempted to make a second trial! Yet who can tell how the taste grew upon him? It is even so with the Fig. We have heard the tyro pronounce a fine luscious Fig *insipid*, or *too sweet*. We once thought so ourselves, but with years came wisdom—*experientia docet*—

and we now sigh over the breakfasts which, whilom, under the canopy of sunny Tuscany, we used to make off a well piled-up plate of fresh and luscious Figs, eschewing all meats or other solids. Reader, this is not poetry, but fact; and in the plenitude of our benevolence excited by such recollections, we desire for you a similar experience.

As to the culture of the Fig, there is nothing difficult. The chief requisite is to protect the tree against the severity of the winter; and this is done in precisely the same manner as the tenderer varieties of the Raspberry, viz., by covering with earth. We have seen a protection of straw resorted to, but have never known it successful in this latitude. The best method of protection is to dig about the tree in the fall, deferring the act as long as the ground remains unfrozen, and then undermining and throwing the tree, so that all the branches and canes lie upon the ground; and then to shovel upon them soil enough to thoroughly bury them beyond the reach of the frost, taking care to so leave the ground that all excess of water will readily drain off.

There is a decided advantage achieved in this process in the way of root-pruning, which prevents the plant developing too much into a tree shape, and thereby rendering it, as years increase, more difficult of being protected. The uncovering should be delayed as long in the spring as possible—at any rate, until the long cold storms of early May are passed, say until about the 12th of May. Then, if nothing untoward happens, you may look for a Summer and Autumn crop. The season this year has been decidedly favorable to the fall crop, and at this moment of writing we are luxuriating in abundance, with a promise of still more. Those that come too late to ripen should not be despised as worthless; for they may, by skillful hands, be converted into a delicate and delicious preserve. We have an ancient spinster aunt who, bless her dear old heart! put the idea into our head, and once, while on a visit to us, gathered the last of the Figs, and made us a jar of preserves which went far ahead of any East India preserves.

But enough about Figs for the present. Should our Editors care a *fig* about us, we may hereafter have another word to say about *culture*.

[Of course we prize you above many Figs, so send along the "culture," and a plate of figs with it, if you please, for we have not to learn to love so delicious a fruit. We have knowledge of two Fig "plantations," managed very much as you suggest, and the success is complete.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the Editors and Proprietors, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

A WORD FOR OURSELVES.—As we approach the close of the year, it may not be out of place to give our readers some intimation of our plans for the future. The recent addition to the editorial and business departments of the magazine will enable us to increase its value in every respect as a standard journal of Horticulture and Rural Art. In consequence of the great attention now being given to the culture of the grape, and the often expressed want of reliable and impartial knowledge in regard to cultivation, varieties, &c., we shall devote an extended space to this subject, believing that in so doing we shall meet the wishes of a large class of our readers. The grape, undoubtedly, is destined to become our leading pomological interest, and a matter of considerable national importance; we purpose, therefore, making it one of our specialties. In addition to our own editorial articles on this subject, we shall give others from writers of well-known ability, including a series on the manufacture of wine. Fruits generally will receive a full share of attention, not only as objects of luxury and gratification, but especially in reference to their value for market. In this connection, due space will be given to the cultivation of fruit under glass. Plants and flowers will continue to receive their full share of attention, constituting, as they do, an additional charm to every home, from the highest to the humblest. The inmates of the vegetable garden, likewise, will claim a share of our attention, and we shall give more space than heretofore to the wants of those occupying small plots of ground.

Landscape Gardening, Ornamental Trees, Engineering, &c., will be liberally treated, and embrace all matters of taste and construction necessary to their full-development and understanding. The subject of Rural Architecture is one of growing importance, which we shall endeavor to treat fully. Horticultural Buildings will receive special attention. The construction of glass houses for growing fruits and flowers is by no means fully understood; as a matter of economy and utility, combined with architectural beauty, there are many improvements that rarely get beyond the professional horticulturist. In addition to all this, we shall

furnish full information on every subject relating to the progress of Horticulture, Gardening, Entomology, Botany, Hydraulics, Drainage, &c. Each volume will be liberally illustrated, and form a record of Horticulture not elsewhere to be met with.

Every effort will be made to improve the Horticulturist from month to month, and in respect to literary ability and typographical art it will be kept fully up to the highest standard, and as such we offer it to the horticultural public, believing that, with increased energy, a more extensive list of contributors, and better facilities, it will meet their requirements. The times require that we should neglect no means to increase our circulation, and with it our usefulness. We hope, therefore, that each one of our present subscribers will interest himself so far as to procure us at least one new name, and in that way help us to carry out our plans. Let us all work together in such a good cause.

ROSIN SMOKE AS A REMEDY FOR GREEN FLY.—The *Aphis* is one of the most annoying insects that the gardener has to contend with, especially under glass. Fortunately, the *Aphis* is measurably under our control; tobacco smoke, whale oil soap, etc., when promptly applied, are always effective, though they can not be considered very elegant applications. The *Aphis*, however, has during the past season made its appearance out of doors in truly formidable numbers, and any new remedy, being equally effective with tobacco, but cheaper and more cleanly, will be welcomed by all. Such a remedy Mr. Jules Delaleux, in a recent number of the *Revue Horticole*, claims to have discovered. It consists simply of the smoke of *rosin*, a substance that is cheap and within the reach of all. He says, "For some time the great majority of horticulturists engaged in the cultivation of Peach trees have employed for the destruction of the green fly, which commits a great deal of depredation upon these trees, the smoke of tobacco, and with great success; but as I have always considered it expensive, I have replaced it with great success by another, the price of which is comparatively insignificant. For several years I have used the smoke of *Rosin*. Rosin furnishes a larger quantity of smoke than tobacco, and till this time has given me results quite satisfactory. It is sufficient, I believe, to bring this experiment to the attention of horticulturists, who will not hesitate to make use of it, the price of rosin being a great deal cheaper than that of tobacco." We hope this simple remedy will meet with a trial.

A NEW GRAPE FROM PENNSYLVANIA.—We last fall spoke highly of a new grape from Catawissa, Penn. Samples received this fall fully sustain its high character. We shall in our next give it a name, and describe it, a drawing being now in preparation.

A NEW FLOWER POT.—Mr. Bridgeman has placed on our table a new flower pot, which is one of the best things we have seen. It is made of fine clay, is firm and porous, has an ornamental rim, and in all respects is a very neat, dura-

ble, and useful article, especially for rooms. The color is a pretty light drab. The price places it within the reach of all who want a tasteful and good article.

QUEEN'S COUNTY AGRICULTURAL SOCIETY.—The annual fair of this Society was a decided success. Our account is crowded out, with many other things, till next month.

RARE Books.—Our readers will find in Mr. Miller's advertisement a collection of books not easy to be got in this country. Many of them are rare, and are worthy of special examination.

A NEW PEAR.—From Mr. E. Rockwell, of Middletown, Conn., we have received a seedling pear of excellent quality. As our outline is not finished, we defer a description till next month.

THE DELAWARE.—Mr. Samuel B. Parsons, of Flushing, writing from Brattleborough, Vt., says: "I saw at Springfield a Delaware vine three years planted, bearing *one hundred and sixty* bunches, many of them five inches in length." That will do, even for the Delaware.

WANTED.—We wish to procure the following volumes of the **HORTICULTURIST**: vols. 1 to 5, (1846 to 1851;) vol. 8, (1853;) and vol. 13, (1858.) For any twelve numbers, we will send a copy of the magazine for 1862, or a bound copy for 1860 or 1861. We will make a cash offer for the above volumes, or for single numbers, on receiving a list. Those who wish to complete their sets, should make immediate application.

A SEEDLING PEACH.—Mr. Cranstoun, of Hoboken, sent us a seedling Peach Oct. 18, which was then in good condition. It is a large yellow fleshed Peach, with a small pit; sweet, moderately juicy, and very good. Its large size, late ripening, and good quality render it valuable.

NEW BRIGHTON HORTICULTURAL SOCIETY.—One of the good effects of the recent successful exhibition of the Brooklyn Horticultural Society has been the inauguration of a Horticultural Society at New Brighton, Staten Island. For this we are mainly indebted to the exertions of Mr. Ripley, and a few others whose names we can not recall. In about two weeks from the time the subject was started, a very interesting exhibition was held, which passed off pleasantly and successfully. We went down and helped them in a small measure, but were compelled to leave before the close. Messrs. Ripley, Chorlton, Egan, Decker, and others, took a prominent part in the exhibition, at the close of which officers were elected, and the New Brighton Horticultural Society took its place among the institutions of the day. As soon as we can procure an official list, we shall give a list of the prizes, officers, etc., and the details of the exhibition.

BULBS.—Mr. Bridgeman, of New York, has sent us a sample of his bulbs, for which he will please accept our thanks. The kinds are choice, and the bulbs as fine as bulbs can be. We wish all our readers had some as good. They are indispensable for winter blooming.

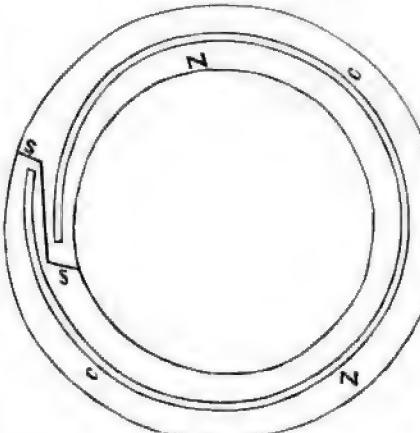
THE ADIRONDAC GRAPE.—We have received from Mr. Bailey, of Plattsburgh, a bunch of this new grape, which is said to ripen two weeks before the Isabella. We regret to say that the specimen was too imperfect to enable us to form a just opinion of it, the berries having shriveled and lost their flavor. We shall endeavor to learn more about it.

A BLUE BLACKBERRY.—We saw recently at Mr. Erhard's, at Ravenswood, a Blackberry so thickly covered with blue bloom as to make the term "blue" quite appropriate, if it does not rub off too readily. It is a trailing variety, a seedling of *Rubus cæsius*, a native of Europe. Of the fruit we can say but little, the plants having been cut up for propagating. The little we saw had large pips with small seeds. The flavor was agreeable, and it may prove to be good; but of that we shall be able to say something after another season.

FROST.—Mr. Stewart writes us that they had their first white frost at Middle Haddam, Conn., on the 14th of October. We have had none about New York yet. The season has been remarkable thus far for its freedom from frost.

GALVANIC SLUG AND SNAIL SHOCKER.—The following "shocking" method of destroying slugs and snails we take from the *Gardeners' Chronicle*. These pests are getting to be very annoying among us, particularly in frames and among orchideous plants. The remedy is curious, simple, and within reach of all; but of its efficacy we have no personal knowledge.

"Having a few pet plants which slugs and snails are particularly fond of as food, I have devised the following simple and efficacious mode of protecting them against their and my enemies; and as this plan may be useful to some of your readers, I herewith send you a description of my galvanic circle. Procure a flat ring of zinc, large enough to encircle the plant; make a slit in the ring after the manner of a key-



ring, so that it can be put round the stem of the plant and then rest upon the ground. Now twist a copper wire into a ring very nearly of the same circumference as the flat zinc ring, and putting it round the plant, let it rest upon the zinc, as in the illustration. No slug or snail will cross that magic circle; they can drag their slimy way upon the zinc well enough, but let them touch the copper at the same time, and they will receive a galvanic shock sufficient to induce them at once to recoil from the barrier. It will, of course, become evident that mural fruit can in a similar way be protected by fastening along the wall two

narrow ribbons of the metals mentioned. Other applications of this principle will doubtless be made in many gardens as the occasions arise. In the illustration Z Z is the zinc, S the slit in it, C C the copper wire.—*Septimus Piesse, Chiswick.*"

Catalogue of *Charles F. Erhard's* Nursery, Ravenswood, L. I., for fall of 1861 and spring of 1862.—This nursery is devoted mainly to small fruits and Pears.

Correspondence.

EDITOR OF THE HORTICULTURIST:—*Dear Sir:* I was induced to write to you in regard to growing fruit trees and grape-vines in moss baskets, by several articles I read in your interesting paper, and as I am one of the many who have seen this done for the first time, you will allow me to join my report to those you have already had.

A couple of months ago, I had the pleasure of visiting the beautiful grounds of Hon. W. B. Lawrence, and was introduced to Mr. Chamberlain, who kindly took me to the greenhouses, and showed me, besides some curious and rare flowers, the moss-baskets in question.

The effect was beautiful! Imagine a quantity of graceful moss-baskets hanging from the rafters, with luxuriant growth of grapes; bunches hanging (not tied) every six inches around the baskets, equal in size to those trained along the rafters and in pots. As I was expressing my astonishment that such a crop could be grown in so small a space, Mr. Chamberlain took one of them down, and placed it in my hands. I can not tell you how surprised I was to find them so extremely light.

He afterwards showed me the empty wire baskets. They were of a variety of elegant shapes, about two feet in diameter, containing a tin basin, such as those used in the country as washbasins, very shallow, about three inches and a half in depth, and not more than fifteen inches in diameter, with a few small holes in the centre, the space between the basket and the basin being filled with moss. On a table I saw some of the artificial soil which is used for the baskets: it was of a grayish color, but I do not know whether it was sand and charcoal. From what I have seen and handled, I can infer that there could be no water, except the necessary moisture contained in the soil; that "the roots were *not* surrounded with water," and that "in this basket there was no cup full of water," as stated by Mr. William Carmiencke.

There seems to be a prevalent idea that the moss was used as a means of nourishing the vine. Such is not the case; for it has no communication with the

plant, and makes the baskets appear a great deal larger, and to contain more soil than they really do. I saw subsequently some fine specimens of Pineapples in pots, but the largest plant and the finest fruit was in a patent basket.

With an apology for taking so much of your time, I am, Sir, very respectfully
your obedient servant,

L. DOVILLIERS, M. D.

Newport, October 1st, 1861.

[We have to thank you, not only for the tone of your letter, but for a more satisfactory description of these baskets than we have yet seen.—ED.]

MR. MEAD:—*Dear Sir*: The excellent article of Mr. Woodward in the HORTICULTURIST, page 277, ought to be studied at once by those who dispute so loudly the nativity of the Delaware Grape. Mr. Prince and others, the “European party,” constantly assert that its foreign origin is demonstrated by its dissimilarity to the American Grape; and they point to the Isabella, Catawba, Concord, Hartford Prolific, and the wild grapes, *labrusca* and *vulpina*, with which kinds the Delaware has nothing to do.

Let them compare it with the individuals of the *Vitis aestivalis*, the Elsingburg, and others, and the wonderful dissimilarity is gone. Indeed, its resemblance to the Clintoni is so marked, that most persons would be unable to distinguish the young shoots, buds, and leaves. The same little currant-like parasite is also found on both.

Let Mr. Prince compare the Delaware and its own species.

I think the “Summer Grape” needs more attention: do not you? Its time is admirable. It has received no systematic treatment yet for seedlings, so far as I know; yet it has produced the chief American Grape. Yours,

New Bedford, August 10th, 1861.

AESTIVALIS.

[We do not think you are quite on the Delaware track, but approaching it. We shall have some good words for you soon.—ED.]

THE BUCKLAND SWEETWATER GRAPE.—*Mr. Editor*:—In the September number of the HORTICULTURIST you have been kind enough to give your readers an extract of the “Royal Horticultural Society, of London,” all of which is very nice and very beautiful till you come to the Grape “question;” then your compositors have made Mr. Beaton say that “The bunches of the Buckland Sweetwater weighed six pounds four ounces!” From this your readers have a right to infer that there were more bunches than one, and that they weighed *six pounds four ounces each!* This is a monstrous Sweetwater, Mr. Mead, and such a very large drop of Sweetwater that most likely many of your readers will be after this *six-pounder* as soon as they can get it. I wonder if it would suit Beau-regard down in Dixie?

To be serious, this is a typographical error, but should be corrected. We are willing to give them on the other side all credit justly due them, but they *can't*

grow Sweetwater Grapes (Buckland or any other) to six pounds a bunch! The report should be read thus: "Three bunches," in the place of "The bunches."

FOX MEADOW.

[Thank you for the correction.—We think the "Bullet" Grape would suit Beauregard better than the Sweetwater.—ED.]

VITAL FORCES IN PLANTS.

(Continued from page 116.)

"Much has been said relative to the food of vegetation, while but little is thought and said about these silent means, or *mechanical* principles *quietly* at work in furnishing us food. If this matter is put in the hands of really *competent scientific* minds, disposed and able to give it that attention the subject deserves, good may be derived. Great vitality promotes health and resists disease in our animal systems, and so may vitality in vegetation promote health. New grounds, having the unexhausted elements, as iron, salts, etc., do make better trees. There are localities where trees are long-lived and healthy, where the essential elements may pertain to the soil, and which may illustrate my thoughts. Decay of any manures in soil necessarily releases electricity, while it is desirable that there should be mineral manures for greater power and continuance; hence the necessity of knowing the contents of the soil. The condition of the ground materially affects the supply of vegetation, with whatever there is of nutriment in the soil. If the ground is hard, and weedy or grassy, but little *motive* power can be secured, and *that little so subdivided* with that which is useless that that which is cultivated can not be *built up*.

"Take a microscope and examine the operations of nature in regard to *motion* during change of properties of matter; mash seed, and acidulated water on it, on a glass under a microscope, and observe the varied motions under the electrical disturbances going on. Mere *absorption* of that water could not beget such action or recombination. The experiment will be suggestive of many others. I have very hastily, of a night, and without any attempt to systematize ideas, or to do it creditably to myself or the subject, just penned my thoughts, as presented, as *mere suggestions* to those more competent; nor have I time or ability to do the subject justice, and I desire others should consider the matter on its *own merits* without regard to the *source* of these suggestions.

Many residents of the country could afford to drain 100 feet square, for garden grounds, with cheap *iron* pipes, and connect them with a galvanic battery, continually working during the growing season, materially affecting the growth of vegetation. If the experiments referred to are reliable, the ground, being drained, becomes more porous, the air and light promoting greater chemical action, and hence a greater supply of the motive power.

"Life must be preceded by the dissolution of matter of various kinds. By means of telegraphic machinery, operated by electricity, as released from the de-

composing metals, we are in union with the world; and were it not for this power, it is doubtful if chemical action could be secured, and if it could be, it is doubtful if with air, the nutriment of the soil. Vegetation would, what we can grow, for want of a power to bring together the various elements composing our food. If these ideas are correct, we should seek a more *familiar* acquaintance with so *ingenious* and so *good* a *mechanic*, unceasingly employed in supplying our wants. But few, however, are prepared to think that such a *universal* mechanic exists, because but *little known*. We introduce the gentleman as worthy of our gratitude and highest esteem, and don't doubt but he will treat the most humble, in seeking his acquaintance, in accordance with his known liberality.

"Liebig is right in claiming the use of minerals, and others vegetable manures, but neither have seen the above philosophy. Minerals, by creating greater vitality, economize what little nutriment there may be in the soil naturally.

"Capillary attraction in *dead* and *living* vegetation may be *very* different. The simple *adhesion* of fluids to *sides* of capillaries, in *dead* matter, will overcome but a slight amount of *gravity*, the sides of the capillaries *probably* having lost their contractile organs and tenacity for electricity or conducting power. The living capillaries are *probably* endowed with slight contractile organs and powers of conducting electricity, there being a perfect connection between the roots in the ground and leaves in the air, by capillaries, to hold and conduct the sap to the leaves, where it is elaborated. The chemical action, during change, disturbing the electric condition of the ascending and descending capillaries, one being negative and the other positive, draws up the sap against gravity, and allows the elaborated sap to be operated on by gravity, and it descends. On severing these capillaries, the sap flows down, because the capillaries above the wound have lost the electrical condition resulting from a perfect connection of the negative and positive capillaries or nerves attending each. Hence a loss of the mechanical power of drawing up the sap; the positive electricity adhering to *sides* of ascending capillaries, attracting each drop of the sap, and overcoming gravity, operating on the aggregate weight of the minute column.

"No such a column of fluid can ascend a *dead* capillary. The oil ceases to ascend a wick as soon as the combustion ceases, and it is doubtful if the electricity constantly evolved during combustion does not materially promote the ascent of the fluid. A fluid will rise to the upper end of a short wick or tube, but will not flow over, unless the end be bent downward, forming a siphon, the descending liquid drawing up the liquid. Some other power must be seen to account for ascending sap in trees than mere capillary attraction, or mere adhesion to *sides* of capillaries. There is no analogy between the limited ascent of a fluid in a *dead* tube, and the great height of ascent in *living* tubes.

While fluids will rise many feet in a *living* tree, let that tree be severed from the earth and die, and then its dead roots be placed in water, and a fluid would not rise in it the twentieth extent of its length, showing some living or vital principle at work, attracting upward the sap. There is a power of attraction as well as repulsion; heat radiates because attracted, and thus diffuses and equalizes. So electricity, by virtue of its release during chemical action in the soil, is active in the earth, and also in leaves of trees; the two being connected by nerves, or the conducting power of the capillaries. Those disputing the theory of the attractive power of electricity, thus generated, accounting for capillary attraction, should explain why sap will spill out when capillaries are cut, and electric connection between earth and leaves severed. If mere capillary attraction must account for ascent of sap, then dead pieces of trees, or fresh-cut parts of trees, would equally suck up the sap. My proposition is sustained by experience.

"Elongated cells, or tubes, or capillaries, have a mechanical *form*, the same as our blood-vessels, to serve as canals to convey fluids from which the plant is built up; and while they thus serve such a purpose, we must look elsewhere for the *motive power* to the movements of the sap. As yet, but little is known of this *motive* power in plants or animals. We do know that in every change of density of matter, or chemical change, electricity is disturbed, and flows, or is released, and seeks to be industrious in promoting new arrangements, by carrying matter subject to certain laws in recombining. It is not unlikely that the living tubes, or capillaries, formed of cells elongated, have a kind of valves, alternately contracting by electric excitement, forcing upward the sap, which valves, could they be laid open under the microscope, could be seen; if not, then the tenacity of sap adhering to sides of tubes must arise from the perfect electric condition and connection between roots and leaves.

"*Motion* presupposes something more than mere *mechanical force*. Our physical systems are powerful *galvanic batteries*, manufacturing the life-force, or vital physical principle, during combination of air and carbon in the lungs, and chemical action of food in the stomach; the heart, between the two positive and negative conditions, derives its force of propulsion of blood through our arteries and veins from the attractive forces of the two electricities. The mechanical form of tubes may remain, and yet no action or motion can go on within them; there must be *life* derived from *death*—the release of the bound-up living principle in dead matter, by its chemical decomposition; and if there is no chemical change going on, no life-force can be secured. Hence the force of my proposition, that ground must be frequently stirred up to let in light and heat, and to aid *contact of varied manures*, or earthy matter, promotive of chemical action—an essential pre-requisite to secure life and force; and when thus secured, not allowing that life-force to be directed, from that which is being cultivated to weeds, etc. This developed mechanical power must be directed only to that we cultivate; and extent of crop depends upon extent developed of this life-force, and to secure it

largely we must furnish the soil with diverse manures, especially mineral manures, as furnishing more of life-force, to work up the nutrient from animal and vegetable manures. The greater the diversity of manures, the greater the chemical action, provided contact is promoted by frequent stirring, and letting in light and heat of sun."

[At a future time we shall offer some comments on this article.—ED.]

BROOKLYN HORTICULTURAL SOCIETY—SPEECH OF PRESIDENT DEGRAUW.

Concluded from page 438.

Another object, far more interesting, invites your care. It is the culture of plants indigenous to our soil; they are confided to our guardianship. But look around you; see them perishing in multitudes beneath the plowshare and the axe. Certain species and varieties which in old time adorned the verdant mantle of the earth, but their memorials, transmitted to us in the rocks, is a demonstration of their original existence. And shall it ever be recorded of any valuable varieties of our native plants that their sweetness has expired on the "desert air?" By more active and energetic measures, I trust yet to see a garden established, in which will be collected from our woodlands and our fields a beauteous and bright floral galaxy—which would be both practical and scientific, discovering to us large views, which it is noble to possess, and could we but effect their consummation the reality would be magnificent. We might then call together, and exult as we contemplate, the rural families of a rural offspring. We might find within this native circle, when possessed of suitable advantages for their improvement, the rarest and most inestimable qualities to please and benefit mankind. Among the changes that are exhibited upon the surface of the globe, none are more worthy of remark than the transmutations which are effected in the vegetable tribes. Our celery is but the parsley, or smallage, in an advanced state of cultivation. The cauliflower and the borecole have issued from the humblest plants. When in natural condition, the asparagus can scarcely be recognized as that which, when domesticated, is a table luxury; and the potato, which is the sustenance of millions of our race, has been but generally cultivated about one hundred and thirty years—and, the most useful of all esculents, it is insignificant and uninviting in its natural state. And can we for a moment think that the progress of discovery has been arrested? At this moment many are engaged in traversing our fruitful territories that they may answer the inquiry. Let us emulate their zeal, and let us not value at a lower estimate than others those rare gifts which the great God of nature has placed in our hands. Let us coöperate in the attainment of our interesting purpose; let us tie together our rods, in the

manner of the Roman faces, and this union can not fail to give us permanence and power. Let us persevere to the full attainment of the object which we contemplate. Then, by science and industry, we will contribute to the stores of human happiness, our science will take the lead, and our footsteps be honored. I view that our cause is a noble and benevolent one. It exerts a salutary, intellectual, and moral influence. It has rich resources for the head, and it has rich resources for the heart. While it instructs and edifies, ennobles and exalts, it awakens feelings of philanthropy, and its motto should be Peace on Earth. The inscription above its portals should be: Enter, for here is the most magnificent display of the works of God. Like that holy faith which we profess, it calls up sympathies that would excite every one within the extensive sphere of its operation to partake of its innumerable enjoyments and its manifold rewards. Were it not as abundant in its resources as I have alleged, and were it to be merely pursued for the pleasure which flows from it, you will acknowledge, I doubt not, that it is a mental recreation the most liberal and polite; for other studies are not appropriate at all times, to all ages, and in every place; but this has nourishment for us while we are young, and pleasing joys when we are old. In prosperity it is an ornament, and in adversity a refuge and solace. It delights us when at home, and is no impediment abroad. Whether we go forth to meditate at eventide, or are occupied in journeying from place to place, or are wandering through the country in our rural recreations, it is an agreeable companion and a constant friend. If any are themselves unable to pursue the subject, or want a relish for its charms, yet when they see it blooming about others they should not withhold the tribute of their commendation. Our literary institutions should instil into the youthful minds under their charge a love of nature. Teach them

"To mark in every magic change of scene
The grand diversity of Nature's laws,
Yet find in all the ever-present God."

You will thus give them an instructive friend, whose voice will always be cheering, and life never have to be awakened from the slumbers of solitude—

"They may read and read,
And read again, and still find something new,
Something to please, and something to instruct."

Could I accost the ladies of our city, whose attributes are symbolized by the delights of Flora, I might maintain the justice and propriety with which a certain oriental language uses the same words to designate both flowers and the fair. Every estimable virtue that adorns the sex has its type in these exquisite manifestations of the Benignant. And they are adapted not only to the personal embellishment, but for the intellectual and moral discipline of those to whom I would commend the contemplation of their loveliness. Their province is not

only to afford the senses a rich feast, to fill with their rich perfume the air we breathe, and to allure the eye by their conformations and by their tints of color, but by sympathies the most refined, and pure, and amiable, to exalt the soul.

"The spleen is seldom found where Flora reigns.
The lowering eye, the petulance, the frown,
And sullen sadness, that o'er shade, distort,
And mar the face of beauty, when no cause
For such immeasurable woes appears—
These Flora banishes, and gives the fair
Sweet smiles and bloom less transient than her own."

I have urged upon our city authorities the importance of sustaining the cause that I have so long espoused, that we should have more parks, in one of which shall be a Botanical Garden, and that such as we have should become pleasure-grounds, disposed and decorated to regale our citizens; within their walks should be no fumes of the intoxicating deity, but the pervading pure and salutary influence of nature's God. There is a peacefulness and a serenity in rural scenes that have at all times had a charm for the philosopher and patriot. That hand which held the destinies of ancient Rome, when it had guided and saved the nation, held the plow on the farm of Cincinnatus. In the hearts of all his countrymen is the memorial of him who loved Mount Vernon's calm retreat. The shades of Monticello have been forever consecrated, and the memory of our Lafayette is in the memory of cultivating his Lagrange. We rejoice that there is a happy realm where can be realized the joys which inspiration teaches were the first blessedness of man. I would desire to resort thither, with the entire human family, that in the tranquillity of the terrestrial Eden we might live in rural happiness, and die in peace; but we shall in vain seek the enviable spot. One tells us it was in the confines of the ancient Armenia; another points us for its bliss to the lovely valley of Cashmere, and another teaches that in Persia were its gladdening groves; but it is no longer upon earth. Like good men of old, it has been translated. Yet I would indulge in reference to it my kindest sympathies—I would embody my best feelings in a devout ejaculation, that when our studies cease, and toil shall have ceased here below—when, like the grass that withers, we shall have mingled with the dust, we shall hereafter meet within the bowers, and be regaled with the enrapturing transports of that Eden in the skies.

I have thus presented Horticulture and its influences, and the only source of regret that has overshadowed me is, that the mantle has not fallen on one far more able than myself to discuss such an important and absorbing subject, but such as I have presented to you are the thoughts that animate my intelligence, and I leave it with you to determine whether a subject so vast, unbounded, and magnificent is not worthy of your most profound consideration, culture, and support.



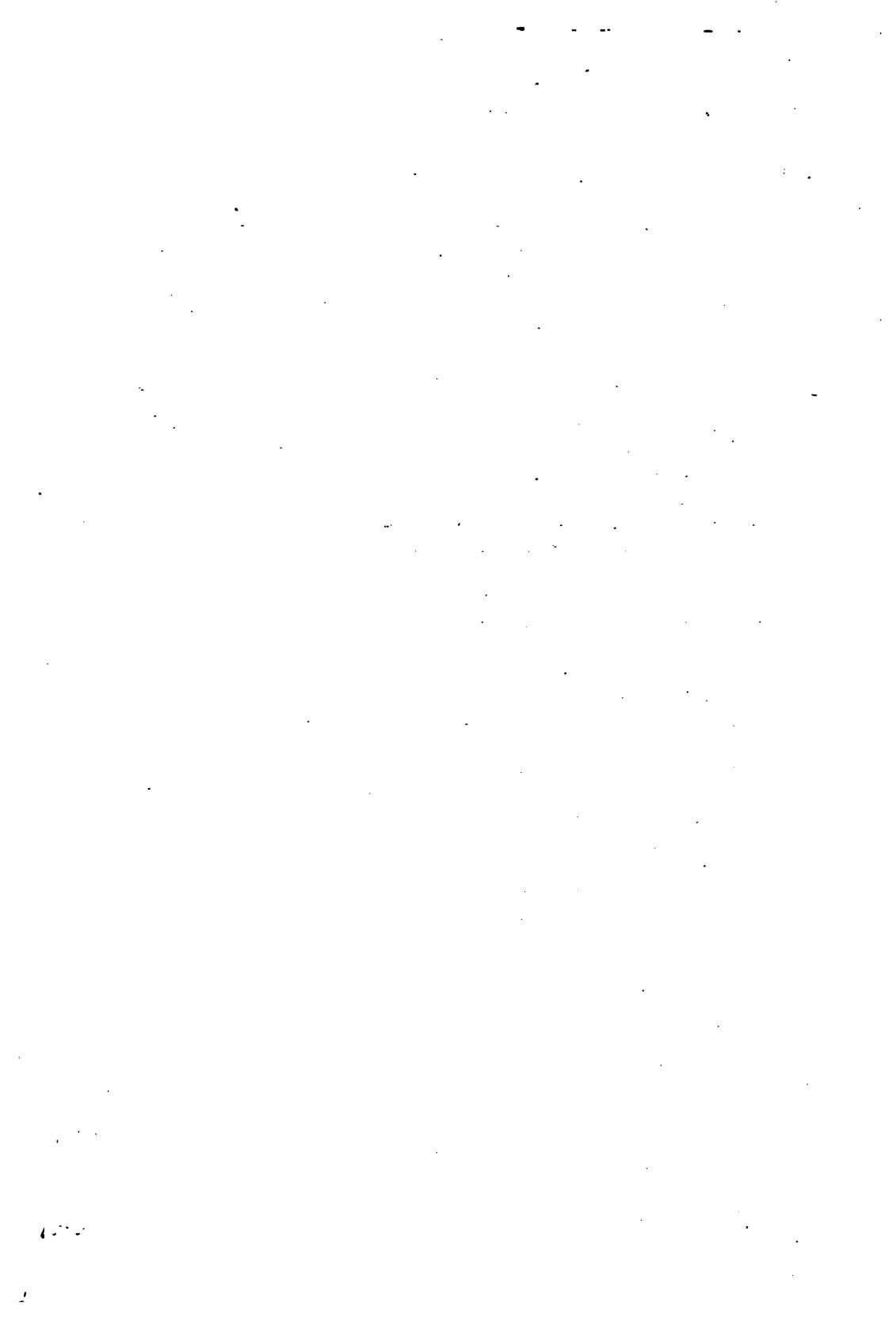


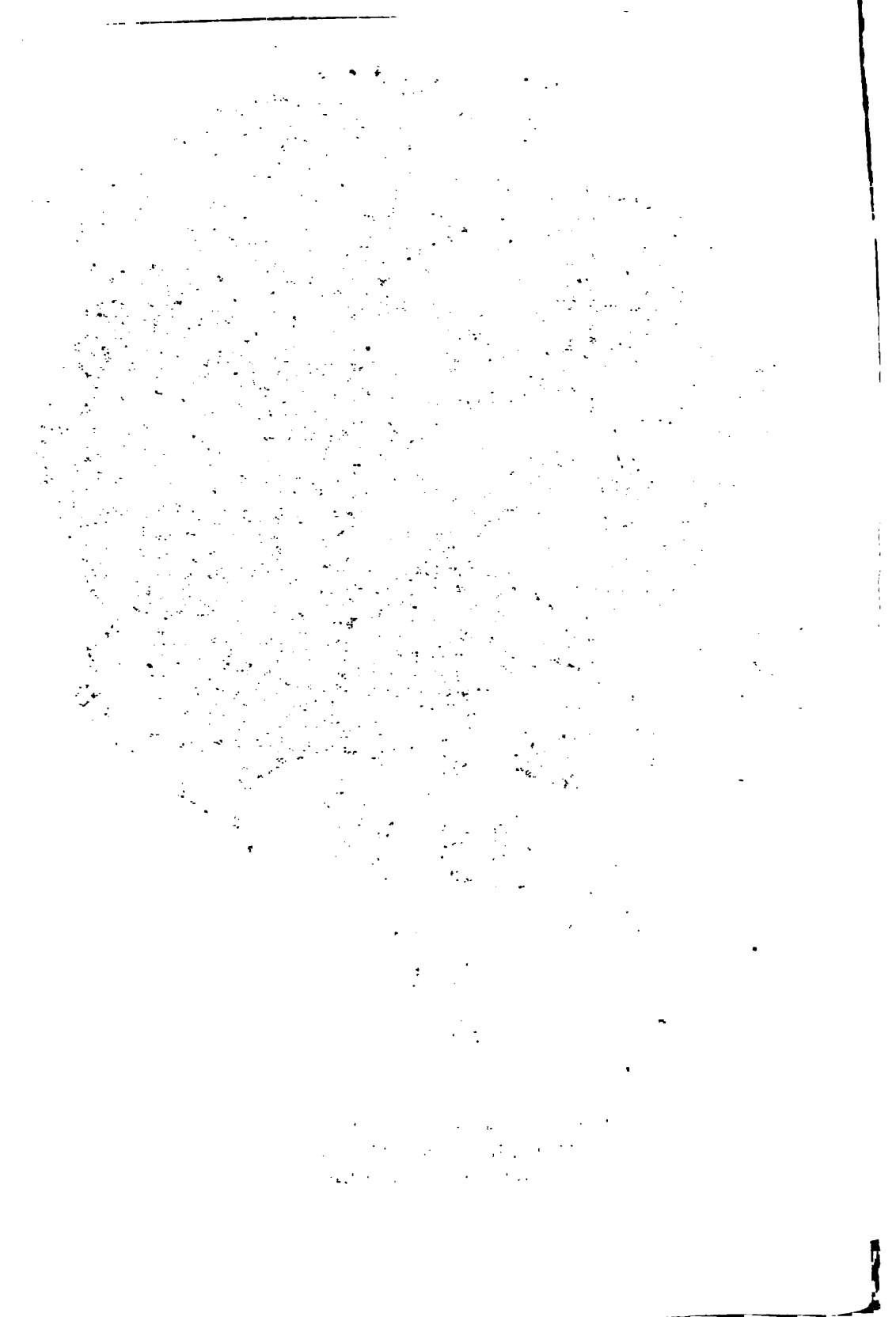
Geraniums.

1. Senior Wrangler. 2. Diophantus. 3. The Moor.

for THE HORTICULTURIST,

Published by C. M. SAXTON, New York.





Hints on Grape Culture.—X.



THE subject of *composts and manures* having been left unfinished in our last, we propose adding a few additional hints here. We have already given muck a very prominent place in the compost heap; its value can not be over-estimated. There are some soils, especially at the west, already sufficiently rich in this material; where this is the case, the muck may be omitted from the compost heap, though at a loss. We have been asked from the west, since our last, whether we would use muck in the compost heap when it is to be applied to a muck soil. We answer "yes" without the least hesitation. There seems to be a misapprehension here. Muck has a value as an improver of all soils not already rich in vegetable matter; it has another value as an absorbent of manures in the liquid and gaseous forms. It is in view of the latter value that we recommend its use in stalls and in the compost heap even when it is to be applied to a muck soil. We advise, therefore, that a heap of *dry* muck be always kept on hand, to be used in stalls, in the barn-yard, in the privy, in cess-pools, and other similar places. In muck soils, lime and ashes become important as occasional top dressings.

In our list of manures, it will be perceived that we have omitted to mention *Guano*. This has been done purposely. Our experience has led us to place a low value on it as a manure for the vine; the only case where its use is admissible is in a soil abounding largely in vegetable matter. The most that we can say of it is, that its use, under any circumstances, will only give us a present gain at a great ultimate loss. Our conviction is, that the use of guano should be entirely banished from the vineyard. Our objection to it, briefly stated, is, that it is too stimulating for our native vines, and produces disastrous results; it also rapidly dissolves the vegetable matter in the soil, and thus impairs that permanence which is essential to the continued health and fruitfulness of the vine. We may state, in this connection, that we have little faith in many of the artificial fertilizers as manures for the vine; some of them, when honestly made, produce good results; but too much caution can not be used in their purchase, to avoid paying twice their value. There is nothing, after all, like good old-fashioned barn-yard manure, properly protected and composted, not only for the vine, but for all cultivated plants.

Liquid manures may often be applied with advantage to the vineyard, but they are generally troublesome, unless special conveniences are provided for their application. Under this head may be included blood, urine, the contents of cess-pools, barn-yard drainage, etc., all of which should be considerably diluted before being used. Blood, however, we should prefer to put in the compost heap. Great

caution is necessary in the application of liquid manures; he who should attempt to use them in the vineyard as he does in the grapery, would find, too late, that he had committed a grave error. The best time to apply them is in the spring when the vine has made a growth of about three inches, or as soon as the young clusters can be seen, and in the early fall when the fruit is beginning to swell for the last time. Liquid manures must not only be diluted, but they must be applied sparingly, so as not to over-stimulate the vine. If the vine is growing well and carrying its fruit kindly, they should be withheld altogether: to apply them under such circumstances would not only be dangerous, but a needless waste of means. If, again, the vineyard has been top-dressed efficiently, no liquid manures will be needed during the same season. They will be most needed, and may be most frequently used, in light sandy soils; in very sandy or gravelly soils, it may even be desirable to use them two or three times during the season. It will always be best to use liquid manures, if possible, just before a rain; they should never be used during a drought, unless the vineyard is at the same time thoroughly irrigated.

After a vineyard becomes established, manures can only be applied in the form of top-dressings. Composts may be applied in the fall, when the vineyard is dressed, or early in the spring, as soon as the frost is out of the ground. Lime, ashes, bone dust, potash, and similar top-dressings, should only be applied in the early spring. We shall explain more fully the use of the top-dressings, etc., when we come to the annual treatment of the vine. When we state, in our last, that we banish the plow from the vineyard after the third or fourth year, we are not to be understood as banishing the important operation performed by that implement, but simply as intending to recommend another which we think performs the operation more perfectly, and without the same danger of destroying the primary roots, which often happens with the plow in careless hands. This will be fully understood when we come to the operation itself.

LANDSCAPE ADORNMENT.—NO. 18. “ARRANGEMENT.”

BY GEO. E. WOODWARD,
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WHEN one sets himself to work systematically to build a house, having in view the principles of convenience, economy, and proportion, his first step is to make or have made a plan embodying his ideas, over which he may study, cut down, increase, rearrange, etc., until his conceptions have taken a positive form, and are freed from all impracticabilities. This is business-like and profitable, and the result gratifying.

Whatever arguments are used in advocating the proper planning and study of house arrangement, (and there are many of great weight,) are equally applicable

to the proper arrangement of one's farm, country seat, or garden, that the whole management may be conducted with the most ease, and every thing be properly done and have its proper place. The full value or capacity of one's property can not be ascertained unless this be suitably carried out, for measurements and appearances are deceptive when viewed on the ground, and particularly so when all can not be embraced at once by the eye.

The arrangement of a country place, with a view to its convenience and economy of labor, and the best position of buildings and roads for artistic effect, is a matter of great importance, and deserves from all who contemplate the making of a new place, or the remodelling of an old one, a close and careful study, for on this depends success. Whatever change or improvement may be contemplated, the most intelligent, and at the same time the most economical manner of managing them is from a plan; and the first step should be to have a careful survey made of all boundary and division lines, and then of all topographical features, that a map or plan may be made, showing the exact size and shape of the property, and the position of every fence, building, road, stream, hill, etc., that may be on it. The survey of the land lines of property in the older states will not only satisfy the owner of the correctness of his purchase, but will, in seven cases out of ten, illustrate the fact that prominent errors exist which it should be his duty to have corrected without delay. There are some men foolish enough to buy real estate, and pay for it, without a resurvey, and do not discover blunders in description until years have elapsed, and original owners dead and gone. Errors of description may arise from many causes; the omission or repetition of a course and distance; the substitution of north for south, or east for west; including lines that have been cut off by other sales; and the copying of clerical errors that have run through and increased in twenty or more conveyances; the practice of deeding lands from surveys made by adjoining neighbors at intervals of generations; using lines made by different surveyors at widely different periods, all of which are referred without dates to the ever-changing magnetic meridian; having them compiled by some one not familiar with the peculiar phraseology of surveyors, and neglecting the different variations and attractions of the magnetic needle, etc.

He who buys a piece of land, no matter of what size, and neglects to have the same carefully re-surveyed, and a vellum map of the same attached to his deed, showing the length and bearing of all lines, the position of all land marks, and the names of adjoining owners, may find that he has purchased a good deal of anxiety and trouble. No surveyor is positively sure his work is right until he has checked it by plotting, yet innumerable conveyances are made without any plot whatever. We mention this fact because error is the rule and correctness the exception, and it is principally owing to the non-employment of competent parties to make surveys and conveyances. The money-saving faculties of some men tempt them to employ cheap assistance, and it is quite frequently the case that they convey more

acres than they sell, and oftentimes with the buyer, that he gets less than he bargained for. As an invariable rule, take no deed or word for measurements or quantities, but employ a surveyor of known ability to run out the lines, estimate the quantities, furnish the diagram, and see that you get all the land you bought. There should be just as much attention paid to this as to the examination of the title; for, although no mis-statement is intended, all are liable to be mistaken, and quite likely to be ignorant of the transactions of former owners.

We shall have a good deal to say hereafter of the wretched manner in which valuable estates are surveyed and conveyed; but to return to our subject. If you have been wise enough to have the boundary lines of your property resurveyed at the time of purchase, from this survey an outline map can be made. There will then be required a topographical survey of the interior, the result of which should be carefully drawn to a scale within the outline, and in the same position as on the ground. This topographical map then becomes a plan on which the quite important subject of arrangement must be worked out. Presuming that new buildings be required, and that no ornamental landscape effects have heretofore been attempted, we will commence by locating the house; this is most properly done on the ground, and then plotted in the same position on the map. The entrance, approach road, and lawn, are next important, and should be managed in the same manner; then the barn and other outbuildings, after which will come other roads and walks; then the flower garden, kitchen garden, horticultural buildings, orchard, pasture, grass lands, etc., all of which, by careful examination of the ground with map in hand, should be as conveniently placed as our present knowledge will admit. Having located all these leading accessories, which we shall class as useful or necessary, plot them all on the map in precisely the same position they occupy on the ground, and mark out the limits of vistas and views from the house and prominent points. Then comes the study, Is this combination harmonious? Is it the most useful and convenient? Can we not improve by changing the positions? Would not the barn be quite as accessible and little less prominent if placed differently? Would not the kitchen garden, which we go to several times a day, be better if placed where the orchard is, to which we go seldom? How shall we plant to shut out disagreeable features, work up our vistas, display our fine ornamental trees, etc.? All of which can be readily and thoroughly studied, and then marked out on the ground to be executed, in precisely the same manner as we study out on paper the combination of parlor, dining-room, reception-room, library, hall, etc., giving each its relative importance and convenience, and the command of certain views, the perfect realization of which is well understood.

But, says one, surveys and plans for landscape improvements are somewhat expensive. Then how much more so is landscape improvement blindly managed. A few dollars or a few strokes of the pencil will correct a plan, while a few hundred dollars will be required to correct a botch in real materials; or a

few hundred dollars, wisely and understandingly expended, will produce more art, beauty, and pleasure than as many thousands laid out without system. And herein lies the disappointment in landscape embellishment. It is precisely the same disappointment that follows the progress of any pursuit, unless one qualifies himself to undertake it.

C A C T Æ.

BY FREDERIC PALMER, OF NEW YORK.

MR. EDITOR:—Will you allow an old subscriber, a true lover of Cactæ, and not an unsuccessful cultivator of these plants, a corner in your valuable columns, for a few remarks called forth by an article on "Cactæ" in your number of September?

The writer of that article says, that "Cactæ have no distinct difference of petal, wood, bark, or leaf; that they have no leaves, the entire substance of the plant being a mass of matter, which may be called a branch, or frond, but never a leaf." Now, although in many instances these plants are not as perfectly constituted, with regard to wood, bark, and leaf, as an *oak* or an *elm*, yet very many of them have leaves just as apparent and just as perfect in every respect as either of these trees. Take one whole section of the "Pereskia," for instance—those with flat leaves, such as *P. aculeata*, *P. Bleo*, *P. grandiflora*, *P. zinniaeflora*, etc., etc., in what do their leaves differ from those of a "camellia" or a "laurel?" They have, moreover, both perfect wood and bark, and so have many "Opuntia," which is most conspicuous in *O. Braziliense*, and in all the tribe when old.

Another section of "Pereskia," and most "Opuntia," have deciduous leaves, "cylindrical" to be sure, but so are also those of *Grevillia*, *Sedum*, *Mesembryanthemum*, and many other plants. Besides, in a botanical sense, the shape of the leaf is of no consequence; it is an organ in which the sap is elaborated through that organ's surface, by contact with the air, as necessary to the life of the plant as lungs to an animal, and therefore must exist in some shape or another, or the plant can not live.

The subject has not been very much studied, but it is supposed by many botanists, among others by Labouret, (who has written a very excellent hand-book of Cactæ), that the "tubercula," or "mammæ," play the part of leaves in such of these plants as lack them in a more conspicuous shape. With regard to "petals," I must own I never saw a Cactus flower without them, and they appear to me to have as "distinct a difference" from the other parts of the plant as the petal of a rose, a "petunia," or a "mesembryanthemum." The fact that a frond, or "piece of a frond," will readily root and form a perfect plant, is by no mean peculiar to "Cactæ," or even to succulents in general; your readers need not be told what a

vast number of plants are usually propagated in this way. The common "scarlet Geranium," for instance, will readily root a piece of young green shoot, let it be taken from the "side" or any where else, so that it have at least *one eye* above ground; and so must the piece of Cactus, or it will not grow; in both these cases you have a piece of succulent matter which differs in no respect, and *an eye* containing the embryo plant. The Geranium will also strike upside-downward, but in this case, as also in that of the Cactus, the growth is retarded.

I agree with the writer that Cactæ require, more than any other plants, a season of rest; but I should be sorry to subject any valuable specimens to a "total abstinence from water for twelve months, even at a temperature of 80° Fahr." The fact is, that most of these plants show a tendency to vegetate towards spring, sooner or later, according to the mildness of the weather without, and this tendency must be fostered by artificial heat and consequent judicious watering and ventilation, or *all pushing flower-buds will turn to wood*, i. e., branches or fronds, in Opuntiae and Cerei, offsets in most Echinopsi, Echinocacti, and Mammillaria.*

The cultivation of Cactæ in collections has very much increased of late throughout the Continent and in Great Britain.

In Paris, the kinds which bloom so easily, and are so readily propagated, as *C. speciosissimus* and its hybrids, *Echinopsis Eyrisii* and others, *Echinocactus Ottonis*, and sundry *Phyllocacti* and *Epiphylli*, may be had in the flower-markets for from 5 to 25 sous each.

Many kinds are expensive. *Echinocactus Californicus* never sells under \$4 to \$5, as a mere offset, \$20 when rooted, and a couple of inches in diameter; *E. C. Texensis*, \$5 to \$15; *Cerei*, from 25 cents to \$25. Of *C. Uncinatus* there are only four or five specimens in Europe; they sold, without roots, at \$20 each this summer. Young *Leuchtembergiae* and *Anhalonium* bring \$4 each, when they are to be had at all. Of *Pelecyphora* there is but one specimen in Paris, purchased at \$25, and one or two at Ghent. Of the different *Discocacti*, not one single specimen exists in Europe. *Melocacti* do not do well in France, when imported as adults, with their "cephalium" ready formed; they have hitherto died off; there are plenty of European seedlings, however, in the trade, which may prove more hardy, but as yet they are very young, and have many winters' trial to undergo before they show their "cephalium," and are fit to take their place as specimens of flowering plants. On the subject of *Melocacti*, I can not conceive how the writer above alluded to can have managed to "hybridize" these plants. The flowers are so minute, so hidden under the wool and spines of the "cephalium," that it seems to me next to impossible to impregnate them artificially. If there is no mistake, his seedlings will be welcome in European collections, where, I

* For further particulars on the subject of cultivation, see divers articles of the writer's, signed with the pseudo-name A. B. C., in the *Horticultural Cabinet*, London, and *Horticulteur Français*, Paris.

have no doubt, they would meet with a ready sale. I, for one, would be glad to purchase a few of them.

I may add, in a general way, that an amateur on the Continent will be able to form a collection of

| 100 distinct kinds for an average of | 15 sous each. |
|--------------------------------------|-----------------|
| 200 " " " | 3 francs " |
| 300 " " " | 5 " |
| 400 " " " | 10 " |
| 500 " " " | 10 " |
| 600 " " " | 10 " |

The last will include all the tribes, genera, and species known and described, but of course a vast number of mere varieties and hybrids, and can not be got together without a good deal of trouble. At this figure most rare kinds will only be young specimens, as *some* of these (as large plants) will fetch 1,000 francs each. The finest collection is that of the late Prince de Salm Dyck, near Bonn, on the Rhine.

There are many dealers exclusively devoted to the propagation and sale of "succulents" in every capital on the Continent, and one or two in London. They all seem to drive a thriving business. Agaveas and Yuccas are at present much in vogue; rare kinds of the former bring very high prices. Verschaffelt, of Ghent, exhibited in Paris, at the last show of the Imperial Society, a few days since, two new kinds, *A. Verschaffeltii* and another not yet named, offsets of which he quotes at 100 francs each. I lately saw, at a dealer's in Havre some splendid specimens of *Yucca aloefolia variegata*, for which he gets about 300 francs each; *Y. quadricolor* of same size would bring at least 1,000 francs.

Versailles, France, 26th Sept., 1861.

[A valuable and interesting contribution, for which we desire to return Mr. Palmer our best thanks. Mr. Barker, to whose article he refers, will no doubt respond.—Ed.]

ON PROTECTING NATIVE GRAPES IN WINTER.

BY PRATIQUEUR.

It is our duty to profit by experience. The results of the past year have taught a lesson to be improved by vineyardists, as a matter of pleasure as well as profit. Among those who laid down their Grape-vines in the fall of 1860, are now, at the fruit-ripening season, to be seen many cheerful countenances, the owners pointing with glowing satisfaction to well-loaded vines, bearing ripe, delicious Grapes, produced, as they firmly believe, by their discretion in protecting the

vines a year ago, some of whom, I am happy to say, have realized a money value for their products which enables them to say that Grape-culture is profitable as well as pleasurable. The protection of vines in this Northern climate is a necessity ; they may escape five years out of six, and yet, if the crop is lost once in that time, the grower not only loses his crop, but very often loses his confidence, so that he neglects to prune, cultivate, and train, and perhaps, through carelessness and neglect, loses his crop of future years, and ultimately the cost of his vineyard. I do not here allude to those who neglect to take the HORTICULTURIST, and thus lose, through *ignorance*, both crops and investment, though there are many such within the writer's knowledge. When one sees a neglected vineyard, and inquires the reason why it is not cared for, he is often told, "It won't pay." Why not? "Because it is so much trouble to cover the vines in winter." Let us look at this, and see if it is so. The writer, who is an enthusiast on Grape-culture, desirous to try experiments, lost many of his vines by a neglect to cover them, or by leaving them tied to the stakes and trellis, to see what would happen to them, while the other portion, covered with earth, or laid on the ground and covered with leaves and snow, were not only in good order in the spring, but have borne abundantly of good ripe fruit, and have already ripened wood for another season, ripening both fruit and wood many days earlier for their protection. A neighbor, with a large vineyard, producing annually many tons of Grapes, covered a part of his vines, which have yielded bountiful crops this season; he has lost, by his estimate, from two to three thousand dollars on those left exposed, the expense of covering which would have amounted to a trifle less than two hundred dollars. Omitting this small expenditure, his unprotected vines have barely paid the expense of cultivating the past summer; indeed, a part of his vineyard has not even been plowed this season, showing that he was discouraged. I could cite many more instances, if necessary, but a word to the wise is sufficient. It must be remarked, that the winter of 1860-'61 was the severest upon many fruits that has been experienced during the present century, either on this continent or in Europe. The cold was intense for perhaps twenty-four hours at a time, and was preceded and followed by moderate weather, with a clear winter sun. There is good reason to believe that native Grapes would bear the severest cold if they were not suddenly exposed to a bright sunshine, after being congealed into solid ice ; it may not, therefore, be necessary to bury them in the ground, but it is undoubtedly the most economical mode of protecting them, is found to be effectual in every instance heard of, and is doubtless attended with less trouble than any other method of covering and protecting known. It can be done rapidly ; with an hour's practice, a man becomes very expert. First, let the vines be pruned and trimmed ready for tying in the spring ; then run a plow two or three times between the rows, near the middle, say about three or four feet from the stakes or trellis, and so far from the vines as to lay no roots bare; then let two men work together, one of whom gathers the canes, and holding them together, lays them

on the ground lengthwise of the rows, while the other throws two or three shovelfuls of earth to anchor them, and continues to throw on more earth, where needed, until the first is ready with more canes from the next vine. They proceed thus through the row. Returning, they each use the shovel to complete the covering. It may all be done in less time than the two men would dig a row of potatoes. This is much easier and less expensive than covering with straw; besides, straw beds become harboring-places for mice, which often damage the canes when short of food. Another method is to construct hurdles to lay over the vines, but it is both troublesome and costly, except on a small scale. Vines are sometimes well protected by laying on the ground, with stones upon them, to prevent swaying about in the wind. There are some hardy varieties which have withstood the vicissitudes of our climate, and which may be said not to need any protection; but they may live in one location, and be winter-killed in another; or, under varying circumstances, the wood of one may be more perfectly ripened, and thus be able to stand severer tests. *It is better to cover them all;* they are then sure to come out all right, and will bear their fruit three to five days earlier for it, which is an item of great importance, adding more value to the crop than all the labor and expense of protection. In the spring, the canes may be lifted with a garden fork, and allowed to lie on the ground until the proper time for tying to the stake or trellis.

[The trouble of covering vines is no doubt greatly overestimated; the advantages are well stated by Pratiquer. A friend on the Hudson, who has a vineyard of several acres, has for ten years or more covered the whole of it. We purpose by and by, to examine the advantages and disadvantages of the plan, and give an approximation of the cost per acre.—ED.]

CULTURE OF CELERY.

BY JOHN EGAN, NEW BRIGHTON, S. I.

For an early crop, the seed should be sown in a cold frame the latter part of March; and when the plants have attained an inch in height, they should be thinned a few inches almost every way. Plants from the sowing will be fit to put out in the trenches at the beginning of June, which is early enough for this climate. To have plants fit any earlier, they would require to be raised in a hot-bed, and be very liable to run to seed, or become piped. Transplanting often will not remedy the matter, though it is the opinion of many that it will; but I have never observed any material difference in the success of the two treatments. The trenches should be opened early in June, 12 inches deep, 16 inches wide, and four feet apart, and be nearly filled with rotten cow manure, if obtain-

able; if not, any well decomposed manure will answer. It should be thoroughly incorporated with the soil, and the whole left level with the earth. This will be found to work much better than sunken rows, which always become more or less filled with the wash of the soil during heavy rains, thus injuring the plants, besides causing loss of time in its removal, neglect of which will destroy the whole crop. If the weather is dry at the planting time, holes should be made with a dibble, seven inches apart, to receive the plants, and filled with water until they retain it somewhat; but pour none on the surface, either before or after planting, as the action of the sun on the saturated surface would harden it, rendering them impervious to air, besides reflecting a powerful heat, and burning up the plants.

The best time to put out the plants is in the evening, and if they are taken up with roots and leaves entire, and planted immediately, success is certain. Many persons cut off nearly half the roots and leaves, and particularly the tap root, which I prefer to remain on, as in case of extreme drought it will find nutriment sufficient to keep the plant in a growing state. Market Gardeners are aware of this, and transplant but once and finally, preserving the roots uninjured; they thus raise good stocky plants, which are strong enough to sustain themselves, and have a neat appearance without clipping root or leaf. As soon as the plants begin to grow, stir the earth slightly around them and keep them free of weeds, but put no earth to them until they have grown twelve or fourteen inches high, and but little then. Many persons injure their Celery by earthing it too soon, and before the plants are strong enough to withstand the partial deprivation of air and light, as well as the considerable compression to which it is subjected during the process of blanching. Crops designed for winter consumption are frequently treated in this manner, the result being high banks of earth, lean Celery, and a small supply when plenty is expected.

The handing of Celery follows next, and is also an important part of its culture, which, if neglected, may lose the crop. It consists in carefully lifting up the lower leaves of the plant, and compressing lightly the lower part of the plant, with the hands, then banking sufficient earth against the base to keep the stalks so close and erect that the earth cannot get into the hearts and cause decay. Some gardeners may smile at my dwelling on so simple a matter, but this article is intended for those amateur growers who do not know these things.

Handing being done, the earth can be laid against the sides with the spade. As the growth progresses, a second course of handing will generally be sufficient, but earthing will be required oftener.

For winter and spring keeping, Celery requires a different mode of treatment, as it will be necessary to grow the plants in the seedling bed in the open ground, so that they may not become over large at the proper time for planting, which will be from the first of July to August; those planted in August being required for spring use. If the seed be sown about the first of April, in drills of a foot

apart, and, when an inch in height, thinned to three inches apart, nice stocky plants will be produced by July, when trenches may be prepared as described above, with the exception of leaving them five feet apart, and selecting the strongest plants for this, the main crop. Otherwise treat them in the same way as already described. About the first of August the remaining plants should be set out in trenches, same as above, except that, as these will not be blanched in the trenches, no earth whatever should be put to the stalks, and they should remain until the proper time for taking them up and protecting them for the winter.

In regard to keeping Celery, there are many ways in vogue, none of which I consider superior to the means I use, and which has been practiced these twenty years past. It is to lay the plants almost perpendicularly against a ridge, each head touching the other, and putting a layer of three inches of earth between each layer of Celery, leaving about four inches of the tops exposed to the light and air until severe frosts come, when the whole should be covered with litter, and a temporary covering of boards made to throw off the rain. A shallow trench should be formed around it to carry off moisture. The Celery to be protected should be taken up and put away on a dry day, and the ridge situated in a dry place.

Celery can also be grown very well by sowing the seed in the row or trench, and without transplanting. In regard to varieties, I consider the white solid a good, reliable kind to grow. Red Celery is harder, and will stand the heat better, but is of coarse quality. The Celery planted in August will be found well blanched, and in good order late in the spring, when it is generally very scarce.

THE VERBENA.—NO. III.

BY A. VEITCH, NEW HAVEN, CONN.

The impression seems to be gaining ground that the growers of Verbenas do not sufficiently realize the importance of selecting the best varieties only in making up their stock, and that dealers do not act wisely in letting out seedlings which are inferior to older sorts. Not that every thing new ought to be discarded which does not come near to the standard of excellence, but such of those as are retained should be possessed of some property in a more eminent degree than is to be found in any of those which are superior in every other respect. And if such a plea can not be urged in their behalf, it would be better to let them remain in obscurity than to have them named and paraded in catalogues, and introduced into gardens, as disappointment, and, it may be, "want of confidence" in the parties who so act would be likely to follow. Were all concerned a little more careful in such matters, no one can doubt that more rapid advances

would be made than has hitherto been done, and infinitely less of disappointment experienced by those who put their trust in every thing new that comes well recommended. In bringing about such a state of things as the friends of Floriculture would wish, it is necessary that the properties of flowers be well understood, and that each and every one act upon the rule not to recommend any seedling unless it is as good, and as distinct from, all the other sorts with which he may be acquainted.

And here it may be as well to dispose of an objection that has sometimes been urged against any important reforms being carried out in Floriculture. It has been set forth, as an excuse, that the public do not give sufficient encouragement to make any greater pains-taking prudent, as the experiment might not pay. It may be true that a considerable portion of what is called the public manifest the greatest indifference as to whether flowers are improved by care and cultivation, or not. So they may be with other things that do not directly administer to their own selfish interests; with sculpture, painting, poetry, and, in short, with every thing that exalts and ennobles man. But there is another portion of the great public, and perhaps by far the greatest, of whom this can not be said; and it is with those that florists have the most to do. They are gifted with a warm love for all that is beautiful in nature and in art. They may not be all rich and great, yet still they are illustrious, wearing, as they do, the badges of nature's true nobility. As a natural and necessary consequence, they love flowers, and many cherish them as an "exceeding great reward." It is to them the florist must look for encouragement and support, and in their behalf—"I will say it"—he will not look in vain, while laboring for their gratification in the production of new and still more beautiful forms than any they may have yet seen. He who does not strive to be the leader of this class must stoop to the ignoble condition of being led by them—an alternative no one will choose, but such as are destitute of all those qualities which alone can make him great and respected in his profession, and entitle him to the high honor of being a "fellow-worker with the Creator."

Regarding the properties of the Verbena, these, we think, have by no one been better stated than by Glenny, founded as his undoubtedly are on principle, and which, if combined in all their round fullness in one individual, would make that individual an object of the greatest attraction. While frankly making this admission, we at the same think an addition might be made which would render them all the more perfect as a standard by which to measure the various candidates for public favor. At the time they were published, flowers with distinct colored eyes were not common, if in existence at all, and for this reason such a feature must have either been overlooked or not anticipated. Now, however, since these are common and deservedly popular, it becomes a question for florists to settle, what form of eye would be the most acceptable, and in harmony with the principles of aesthetics? So far as I am capable of judging the points which constitute

a good eye, I venture to say it: *The eye should not be less than three-sixteenths of an inch in diameter, forming a circle, having the tube for its centre. Of whatever color, clear and distinct, and not running into nor shaded with the ground-color of flower.* It will, we think, appear evident this form is greatly to be preferred to any other; and although flowers with square eyes are common, they should not be sought to be perpetuated in raising seedlings.

Let us look for a moment at some of the varieties in this class, and see what prospects there are for these requirements being met. Ocean Pearl is good as regards size and color, but is badly formed; and the eye, although clear and distinct, is so perfectly square, that, perhaps, it had better been blind. Garibaldi is another we can not help admiring, with all its faults. The eye is not distinct; flowers very large, badly arranged; color, pale claret, deeper shaded; fades soon. A magnificent variety, as regards size and color, for green-house culture. Lady Palmerston was among the first really good in this way. She holds a place still, but is only an approximation to what may yet be expected in this strain. Day Star is a beautiful variety; color, brownish-crimson; eye, clear white, surrounded with a band of deeper shade than ground-color, which makes the contrast all the more striking; too small; otherwise, perhaps the best dark Verbena yet raised. In no instance that I am acquainted with, however, has the standard been nearer touched than by a seedling raised the present season in New Haven, called Dayspring. Color, indigo-purple, beautiful shade, and in striking contrast with the clearest white, and most perfectly-formed eye I have yet seen. The flowers are well formed, and flat, thus forming a most beautiful truss. Let any one compare this variety with such as Edith and Ocean Pearl, and he will readily perceive the form we contend for is greatly to be preferred to any other. And we believe, at no distant day, florists will no more think of recommending Verbenas with square eyes, or with eyes half formed, than they would a Polyanthus or an Auricula in that way.

It is only necessary to mention the names of a few of those in the other section, which we believe comes the nearest to perfection, and which are general favorites, viz., Magnet, Crimson Perfection, Baron Renfrew, and Mrs. C. W. Field. Others might be given, but it is unnecessary, as these are sufficient, and may serve as an example how entirely the published properties and public taste coincide. Were it otherwise, the properties might not be wrong, as public taste is shifting and capricious; principles change not.

Closely related to this subject are the rules to be observed in judging the Verbena, as well as other flowers, at Horticultural Exhibitions. And here it may be observed, this is sometimes gone about in an easy, slipshod way, without due regard to the properties of the flowers, or the rewarding of merit. One cause of this is owing to the fact, that men are sometimes called upon to act as judges who have not bestowed sufficient attention upon the subject to enable them to see such things through the same medium as the true and edu-

cated florist. Their taste may be as good, and their appreciation of the beautiful of the highest order, yet withal they may be lacking in that which is necessary to the creditable performance of this duty. And then, too, they are generally left to choose their own standards of excellence, and give their decisions without any preconception of the points most esteemed by those who know the most of the elements which constitute a perfect flower, whether singly or combined.

Were societies to agree upon the properties of flowers, and publish them for the benefit of all, and at the same time lay it down as a rule for the judges at their exhibitions to be guided in their decisions by these, the cause of much dissatisfaction would be avoided, and a better understanding of the whole subject speedily come to. Then florists would have a greater inducement than they have now to grow nothing, and recommend no more, than what they know to be really good; and judges would have something tangible to refer to and rest upon in the work of adjudication.

There is a way of judging the Verbena which, although not new to the profession, may be possessed of sufficient interest to warrant its being noticed here. It is simply that the judges agree, first, how many points or properties to count in a perfect flower. Suppose the question to be settled is, Which of three stands of Verbenas, of 12 trusses each, is the best? Referring to the properties, as given in the March number of the HORTICULTURIST, and the addition to these we have proposed, the six following points are deducible, viz., form, size, color, substance; form, size, and color, of eye; form and size of truss. The eye and the truss, counting one each, when perfect; otherwise, three-quarters, one-half, or one-quarter, as the case may be; and so with all the other points. This being understood, each flower is tried singly upon its merits, and set down at what it is worth, somewhat in the following way:

| <i>Stand No. 1.</i> | | <i>Stand No. 2.</i> | | <i>Stand No. 3.</i> | |
|---------------------|---------|---------------------|---------|---------------------|---------|
| FLOWERS. | POINTS. | FLOWERS. | POINTS. | FLOWERS. | POINTS. |
| 1 | 3½ | 1 | 2½ | 1 | 3 |
| 2 | 4 | 2 | 3 | 2 | 4 |
| 3 | 2½ | 3 | 4 | 3 | 5 |
| 4 | 1 | 4 | 5 | 4 | 2½ |
| 5 | 3 | 5 | 2 | 5 | 3 |
| 6 | 2½ | 6 | 3½ | 6 | 2 |
| 7 | 4 | 7 | 2 | 7 | 4 |
| 8 | 2 | 8 | 3 | 8 | 3½ |
| 9 | 3½ | 9 | 4 | 9 | 2 |
| 10 | 4 | 10 | 2½ | 10 | 5 |
| 11 | 1 | 11 | 1½ | 11 | 3½ |
| 12 | 3 | 12 | 3 | 12 | 4 |
| | | | | | |
| 84 | | 35½ | | 41½ | |

Thus, it will be seen stand No. 3, having the greatest number of counts, would be the first, No. 2 the second. In many cases there would be no need for having recourse to this method, as, when the competition is not close, judgment could be pronounced at a glance. But in spirited competition, with a number of stands all seemingly alike good, by this way the judges can perform their part, so as to make any well-grounded objections to their decisions almost impossible.

A wonderful improvement has been wrought upon the Verbena during the last twenty years, and there is a broad margin still left upon which to note improvements as great as any that have yet been effected. It is not a long time since the original species, and these few in number, comprised the entire stock of the florist; now varieties can be had to suit almost every taste. It is true, with such as Melindres and Tweediana, he had what he did not "willingly let die," but some of the descendants of these, and others, have been so much improved under his surveillance, that he may well gather encouragement from the past to sustain him in the future, while prosecuting the delightful task of carrying them forward to still higher points of development. And, he may depend upon it, the straightest road to perfection is, to have no dealings with any but the best in raising seedlings.

[You have handled the Verbena so well, Mr. Veitch, that we suggest you take up some other flower in the same way. There is much to be said. We would add a few comments if the article were not already so long.—ED.]

FRUIT TREES IN POTS.

[FROM THE GERMAN OF DR. DIEL.]

SOME time since we saw at Mr. Erhard's an old German work on the Cultivation of Fruit Trees in Pots, by Dr. A. F. A. Diel, published in 1798. There was so much simplicity, freshness, and breadth of view in it, that we determined to give our readers some extracts from it, and now present the first. At this time, when pot culture is exciting so much attention, it will be read with interest. The work has a historical value too, as giving us an insight into the origin of this particular mode of culture, which many regard as quite new, though it really dates back beyond Diel, who, however, seems to have been the first to practice it in a systematic way. Diel is regarded as an authority in pomology in Germany even at the present day. We do not agree with all his views in regard to the value of pot culture; for amateurs, however, they will have a peculiar interest. It is curious to observe that even in his day the multiplicity of names was a sore vexation; it has now got to be an intolerable nuisance. But to the first extract:

"In trifles, as well as in important matters, it is almost ever chance which leads

us to new discoveries. I should have missed many an hour of serene pleasure, if necessity had not driven me, in the fall of 1782, to plant a peach tree in a pot, because, on account of the frost, I could not plant it in the ground. I kept the pot in a room, where the earth did not freeze, and as early as the beginning of March the tree commenced to thrive, and blossomed quite unexpectedly. I bestowed the greatest care on it, gave it every chance to receive the sunshine, and throughout the whole summer it throve admirably. The tree retained two peaches, and in the fall they proved to be the real long sought-for *Venusbreast* (*Tetron de Venus*).

"I had, indeed, seen trees in pots before that time in France, but these were always the *dwarf Reinette* (*Reinette pomier nain*), or the *dwarf Peach of Orleans*, and the *double-flowering Peach*. In Strasburg I saw also the dwarf Almond in pots. But all this made as little impression on me, as to deriving therefrom any conclusions for pomology, as my forcing of roses, or the many large orangeries which I only wondered at.

"Solely, then, this makeshift to preserve a tree, that I had long sought after, awoke the idea in me to try all kinds of fruit in pots. My fruit garden at that time was small, but the cultivation of the manifold kinds of fruit gave me, nevertheless, the greatest pleasure from my earliest youth. How I delight to the present time, in some trees which I grafted in my eleventh year! My love for the cultivation of fruit trees, was mainly created and sustained by the beautiful plantations of select varieties in the large gardens attached to the "German House," at Marburg. When yet a schoolboy I brought many a good thing home from there, and I had scarcely a tree which had not from four to six varieties in its crown.

"The idea of raising all kinds of fruit in pots, opened to me the grand prospect of being able to dedicate my leisure hours to pomology, and to try all and retain the best. So far I had wasted these moments of evening leisure on flowers, and how many of them yield us for fifty weeks of care, only two weeks of pleasure, which is often spoiled by bad weather! Now these splendidly blossoming fruit trees are my pot flowers, and throughout the summer hope is watching over them, that they may gladden me with ripe fruit in the fall. Indeed, many of my friends have already exchanged their flowers for fruit trees.

"This, however, would be only pleasure and enjoyment, without real profit. Indeed, many of my acquaintances did not seek for any thing else at first; but soon they sought for new varieties, and enquired into the genuineness of names. In this wise, knowledge and activity, a general love for nature, a greater attentiveness for her rich treasures, and many a profounder observation of vegetation were developed, which slumbered before unnoticed.

"The advantages to the study of pomology, of cultivating all kind of fruit trees in pots, are various and important. Most of my varieties I know only by this means. Not to mention, that the *amateur* can only by this method become by

degrees, and, as it were, playingly, an adept, the cultivation of fruit trees in pots is just as desirable, in fact, it is a real necessity for the *professional pomologist*, who is bent on studying the whole subject of pomology. By it only is he enabled to acquire in a few years a wealth of pomological knowledge in regard to genuineness of varieties, nomenclature, diversity of vegetation, and value of varieties, and so to become finally a competent judge in such matters. Orchards on a grand scale are by no means so efficient for this purpose, and the cost of them, both in money and time, is very large. And where is there an orchard that contains all varieties?"

(*To be continued.*)

THE STRAWBERRY.—IV.

BY A. S. FULLER, BROOKLYN, L. I.

THE Strawberry is one of those plants that will grow in almost any kind of soil, but it flourishes best in a deep, rich sandy loam, one that is always moist, but never wet. To supply it with an abundance of moisture, and have that equalized, never too wet nor too dry, we know of no better or cheaper plan than to trench the soil two feet deep. If the soil is very tenacious, it should be underdrained previous to trenching, and sand, gravel, or very fibrous muck, or leaf-mold, when applied. When the soil is of a light sandy nature, it should receive from one to five hundred cart loads, according to circumstances, of old decomposed muck, leaf-mold, or something of a similar nature, and let this be thoroughly incorporated with the soil. When a piece of land has been prepared in this way, there need be no fear of the plants ever suffering from drouth, or for want of proper food to produce a good supply of fruit. Old, well rotted manure of almost any kind is not objectionable on very poor soils, but we much prefer leaf-mold or old sods, with a little ashes or plaster, in preference to barn-yard manures, for these latter have a tendency to make the plants over-luxuriant, and produce more vines than fruit.

Having prepared the soil for the reception of the plants, the next consideration (if for garden culture) is the arrangement of beds; and these should be four feet wide, planting three rows in each, placing the plants eighteen inches apart each way; this will leave six inches margin between the outside row and the walk, which should be two feet; this gives three feet between the plants of parallel beds. This is none too much space between beds for standing room to gather the fruit; and if different varieties are grown in beds side by side, a less space than three feet would increase the danger of the plants running from one bed to the other, and becoming mixed, which should be guarded against, if any thing like good culture is attempted.

When pistillate varieties are grown, they should be planted in alternate beds

with perfect sorts, but never plant both kinds together in the same bed, as no two varieties are of the same vigor, and consequently the stronger grower will overrun the weaker, and soon take possession; and generally the poorest variety is the most luxuriant grower.

Time of Planting.—There seems to be two seasons of the year in which the strawberry may be planted more successfully than any other, viz., Spring and Fall. When new beds are made in spring, they should not be made too early; wait until the ground has become settled and warmed by the spring rains. Very little fruit, if any, will be had from the plants the first season, so that there is no necessity of being in too great a hurry; only be sure of getting the plants out in time to be benefited by the warm spring rains.

From the first to the twentieth of September is the best time to make a plantation in the fall; and if planted at this time, and well taken care of, they will give a good crop of fruit the next season. Sometimes plantations are made in August, but as a general thing we do not think there is any thing gained in planting so early, as the plants are not so well rooted; and further, the hot, dry weather which we generally have at this time weakens, if it does not entirely destroy the plants.

Selection of Plants.—The first runners that are produced from the plants in the summer are undoubtedly the best, inasmuch as they are stronger and better rooted than those that are produced later in the season; further than this, we do not believe there is any difference in the plants on a runner, or in their productiveness or the quality of the fruit which they will produce in after years.

Preparation of the Plants.—When transplanted in the spring, half-dead leaves should be pulled off and the roots shortened about one-third of their length, as this induces them to throw out a new set of fibrous roots from the ends cut off, which they would not do if it was not done. No matter whether the plants have been a long time out of the ground or have been taken up but recently, the shortening of the roots is beneficial to plants that are set out in the spring. The roots have become ripened during the winter, and the ends are always broken off when taken up, and it is necessary that they should be cut off smooth and clean before planting again. Not so with plants in the fall; for if it be observed, the roots of the strawberry continue to elongate from the extreme end until cold weather sets in, and when carefully taken up before this time the ends are not broken, and if soon planted again they will immediately grow. To understand this more fully, it is only necessary to take up a few plants in August or September, and place them on the ground in a shady place, and give them a good sprinkling of water. After they have remained there forty-eight hours, examine the roots, and the new growth will be seen by their whitened appearance.

Planting.—Choose a wet or cloudy day for planting, if possible. Draw a line where you are to put the row of plants, keeping it a few inches above the ground, so that you may plant under the line; this is much better than to let the line lie

on the ground, for then it will be in the way of the transplanting trowel. Spread out the roots evenly and on every side; cover them as deeply as you can without covering the crown of the plants; press the soil down firmly around it with the hands. If the weather should prove dry, give them a good soaking with pure water (no mere sprinkling will do) as often as they require it, which will be as often as the foliage droops. Let no weeds grow among them, and stir the surface of the soil as often as possible; the oftener the better. We know that some cultivators assert that there is much injury done to the roots by frequent hoeing the plants, but we have never found the plants injured as much by hoeing or forking among them as they were by neglecting to do either.

[This last remark is a very proper one. The growth of weeds is a frequent cause of failure in Strawberry culture. If the hoeing is done when the weeds are small, (as it should be,) the roots will receive no damage; while the benefit to the plants will be almost incalculable. A weed over an inch high should never be seen in a strawberry bed.—Ed.]

PRUNING ROSES.

BY HAMMOCK PARK.

This operation will require to be performed during March, April, and the first two weeks of May, (but not later.) Commence with the more hardy varieties, such as the French, Moss, Provence, etc.; these, for the most part, have dormant-looking buds, and being less active than others, take a longer time for their development. Next begin with the hybrids, hybrid perpetual, hybrid Bourbon, and hybrid China; but as these are more excitable than the above, they should be pruned the latter end of March and beginning of April. The tender Noisettes, China, and tea-scented kinds should not be pruned till the latter end of April and beginning of May.

Before commencing to prune, it is necessary to observe the habit of the plant, whether it be a vigorous, or a moderate, or a dwarf variety; also, to determine, with those kinds suitable for exhibiting, whether they are required for that purpose, or merely for effect; if for the former, large blooms will be required, and less of them, and these can be obtained by close pruning; in the latter instance, longer pruning must be adopted, when a greater quantity of blooms will be obtained, but they will be inferior in quality, and less in size. Carefully thin out the heads of the plants, and take away the small crowded branches, and all gross, unripe shoots, leaving such only as are composed of firm and well-ripened wood, and leave these at regular and equal distances. Prune down according to the strength of the shoot and habit of the variety; in some cases, to two or three inches; in others, where the habit is vigorous, one foot, or even eighteen inches,

will not be too long for a shoot to be left ; but as this depends upon the habit of the variety and shoot to be pruned, no absolute general rule can be given in shortening the shoots. Cut close to an eye, observing, when practicable, to leave well-swollen, plump buds, which will always produce the finest blooms ; likewise secure those having an outward tendency, and pointing in a direction proper for the handsome formation of the plant. The French, Alba, and nearly all the Moss Roses, require rather close pruning ; and if large blooms are required for exhibition, this particular must be strictly attended to. The hybrid Chinas and hybrid Bourbons are, with very few exceptions, very vigorous growers, and require more care in pruning than most other sorts. An acquaintance with the varieties is necessary to enable the operator to prune successfully ; for instance, we have Fulgens and Brennus, two vigorous growing varieties, which frequently produce shoots five or six feet long in a season, either of which, if pruned as recommended for the French, or some other of like habits, would not produce a flower ; whereas, with judicious pruning, every shoot would be made to give large trusses of blooms. The varieties in these two classes must therefore be carefully studied, as there are some among them which require close pruning, and these may be known by their moderate style of growth, when compared with the majority of the same classes. Young plants, just received from the nursery, will require to be pruned down to two or three eyes, a little more or less, according to the habit of the variety. Unless this is attended to, large and handsome heads are rarely obtained.

[A thoroughly practical article, which will be acceptable to many of our readers. We suggest that you continue the subject, classify the Roses, and give a select list of kinds. It is very important to understand the habits of some kinds, otherwise the wood that produces the flowers is cut away : this we have often seen done. But we leave the subject in your hands, with the hope that you will follow it up.—ED.]

MORE ABOUT GRAPES.

BY DR. NORRIS, WILMINGTON, DEL.

DEAR MR. EDITOR,—I have been much pleased with the Grape discussion between the two doctors in the last numbers of the HORTICULTURIST, and, at great risk to myself, step in between the combatants and proclaim they are both wrong.

Dr. Houghton was the aggressor, for he openly proclaimed that the native Grapes were unfit for table use. This was a bold assertion, doctor, and I am not surprised that the great disseminator of the Delawares should take exception to it. Now, if there is one point on which I feel competent to give an opinion, it is on the *quality* of the Grape. Nature has, I believe, endowed me with a particu-

larly nice organ of taste. Whether this be a blessing or a curse I leave others to determine; but I do most unhesitatingly pronounce that Delawares, Maxatawnneys, and Rebeccas are *good*. If the Delawares were as large in berry as the Black Hamburgh, I should think that we might seek no farther. As it is, I am afraid that it will disappoint many. As to its undoubted hardiness, there can be no question; and it is decidedly one of the greatest acquisitions the native family ever received, despite Mr. Prince. A larger and a better native Grape is the amber-colored Maxatawnney, as I tasted it this autumn at the Pennsylvania Horticultural Society, grown, probably, in some city yard. Whether it will be the Grape for general cultivation that the Delaware is, it is too early yet to say; although, judging from the extraordinary vigor and growth, both of my own vines as well as those of my neighbors, I think it safe to predict that it will rival, and may eclipse, the Delaware for general culture. I named Rebecca as being one of the highest flavored Grapes growing out of doors, although I am not disposed to give it the higher place accorded to either of the former. Well ripened Concord Grapes are not bad, nor are some Isabellas and Catawbas that I have eaten to be despised. Surely Dr. Houghton must be called to account.

Now we come to the other side. The advocates of the natives declare that the Exotic Grapes are only luxuries to be indulged in by the wealthy. Unfortunately, Mr. Editor, this is the too prevalent opinion, and could I hope by any feeble effort of mine to be able to eradicate it, I should feel that I had accomplished much. It will take years, I fear, to make it generally known that, with the exception of thinning, Black Hamburghs and the foreign vines generally, in a cold viney়, require no more care than that necessary to bring a crop of natives to a state of perfection. Let any one mention the subject of Grape growing under glass, and immediately the idea of mystery arises—visions of expensive houses costly heating apparatus, kid-gloved gardeners, mildew, thrip, red spiders, and I know not what, all rise up and completely bewilder and befog the name.

Now, Mr. Editor, I look upon it as part of your duty to disabuse the horticultural public of these ideas. Foreign Grapes can be as easily grown in cold vineries as the natives can be out of doors, with the exception of thinning the berries. Ventilation is a great bugbear with many. Mr. Saunders has given his experience that the ventilators need never be closed after the grapes have once set; and although I can not entirely agree with him, I was yet very glad to see the statement, as it helped to disprove this everlasting subject of ventilation. No two books agree on the subject, and scarcely two gardeners. Border-making is another perplexity; here are the extremists again. One puts forth the idea, all inside border; not a root to be allowed to get outside; and the next day you meet another exhibiting a nine-pound bunch from a vine with most all its roots outside of the house.

It is this wide difference in statements that precludes so many from erecting vineries; and when you tell the public that fine grapes are grown either with the

roots all inside or all outside, with the ventilators always open or without any ventilation, they scarcely know what to believe. The truth is, that while the vine is so free to bestow its luscious fruit on those that give it any attention, it is not yet known what amount of restraint and strange, unnatural devices will prevent its yield.

[Our readers already know what we think in regard to the goodness of native grapes. In this connection, we only feel called upon to endorse Dr. Norris's good taste. We have seen the Maxatsnay several times, but never ripe. We esteem it a very promising grape, but have grave doubts whether it will ripen its fruit much north of Philadelphia; that, however, is a point which has yet to be determined. We have done something, and hope to do much more, to dispel the mists which surround this grape question. To grow grapes successfully in the open air and in a cold grapery requires about an equal degree of knowledge and skill, which, as we have said elsewhere, may be acquired by any person who will study the subject intelligently: without this knowledge and skill, the best results can not be obtained in either case. There are no peculiar difficulties surrounding the subject, however, which need deter any person from making the attempt. Mildew, thrip, red spider, etc., will be the companions, more or less, of all who grow grapes, whether under glass or in the open air; these and similar evils are incidental to all kinds of plant culture, and should no more deter us from growing the grape, than the apple, the pear, or a rose. It is right and proper that the novice should be told of these things, not, however, to frighten and discourage him, but to prepare him to battle with and subdue them. In regard to ventilation, borders, etc., there is a good deal of misapprehension, and there are also discrepancies which can be readily reconciled. We accept your suggestion, Doctor, and promise you an article on this subject. In the mean time, we say again to all who can afford it, Build a grapery.—Ed.]

P E L A R G O N I U M S .

(See *Frontispiece.*)

We present, as a frontispiece this month, portraits of three new Pelargoniums, taken from *Turner's Florist*. They are of the spotted varieties, and present an outline that is nearly perfect. The colors are very fine. The Pelargonium has of late been too much overlooked, even by growers of specimen plants; and as a specimen or show plant there are few that surpass it. It is much to be regretted that old and deserved favorites should be neglected, even temporarily, for new comers, no matter what their merits. We know, however, that the old ones will at some time re-establish their claims to admiration, and reproach us for our neglect. Let us, therefore, while welcoming a new candidate for favor, not forget the old that we know and have learned to love.

THE IOWA STRAWBERRY AND ITS SEEDLING VARIETIES.

BY WM. R. PRINCE, FLUSHING, L. I.

It seems not to be realized that this is a *distinct species* of the *Fragaria family*. Torrey and Gray, and other botanists, have failed to elucidate the fact, that the mighty prairies of the West have presented us with two species entirely distinct from each other, and from all others known: the *Iowensis* and *Illinoensis*. At Cincinnati, they deem the Iowa (or Washington, as often called) one of the most important for field culture, as it supplies their markets with earliest berries in abundance. It is, like "Longworth's Prolific," an hermaphrodite plant; but while this supplies the market abundantly, we have Mr. Stom's statement, that he had never seen Longworth's Prolific there, much and absurdly as the latter has been puffed by others there for its productiveness and other merits.

The Iowa is readily distinguished by its large and luxuriant light green foliage, downy beneath and on the petioles, and by its strong peduncles of large, broad, rounded, light orange-scarlet berries; their color peculiar, beautiful; rather acid; inferior in flavor; the crop a fair one for its size, and *under the disadvantage* that it has to be its own impregnator.

In hardihood none can surpass it, as in its native locality the mercury sinks to 30° below zero. As a hardy, vigorous parent, it may be looked to with great interest in regard to its progeny, and I have taken much pains in the seminal production of new varieties. The Austin's Shaker seedling originated from the Iowa, and is of very large size, similar to its parent in color, and, unfortunately, more acid, soft, and spongy, and consequently not suited for market. Chorlton's Prolific is also of the same parentage, not as large, but similar in color, acidity, and lack of flavor. Both of these seedlings are, like the parent, *hermaphrodite*. McAvoy's No. 1 is also an Iowa seedling, of less size than its parent, similar in color, rather more acid, with little flavor, but more productive, from its being pistillate. I have grown and tested some scores of seedlings, seeking to obtain pistillate varieties, of consequent greater productiveness, and berries that possessed both sweetness and flavor. I have succeeded in both respects; and as all the varieties from the Iowa parent are remarkable for their hardihood, great vigor, and redundant growth, they may be justly deemed the most important acquisitions, as regards reliable crops, throughout the northern sections of our country. I will now describe such of these seedlings as have been selected, and deemed worthy of being named. H. designates the hermaphrodite (called stamineate) varieties, and P. the pistillate varieties.

Sirius, H., early, very large, obtuse cone, light orange-scarlet, fine flavor, the sweetest of the Iowa family; plant vigorous, very hardy, and very productive.

Seraphine, P., monstrous, obtuse cone, light bright scarlet, a splendid berry, white flesh, juicy, sprightly, pleasant flavor; plant extremely vigorous and hardy, very productive, highly estimable.

Sappho, H., very large, conical, light scarlet, beautiful, good flavor; plant very productive, quite valuable.

Diadem, P., very large, rounded, light scarlet, remarkably beautiful, pleasant flavor, suitable for all purposes; plant very vigorous and hardy, exceedingly productive. Produces more than Wilson's Albany, or any other hermaphrodite variety.

Globose Scarlet, P., very large, nearly round, frequently $1\frac{1}{2}$ inches in diameter, beautiful light orange-scarlet, mild flavor, rather soft; plant hardy, very vigorous, with large, broad foliage, very productive.

Triumvirate, H., large, obtuse cone, bright scarlet, good flavor, very productive.

Triumphant Scarlet, H., very large, conical, bright scarlet, splendid, juicy, fine sprightly flavor, ripening gradually for two or three weeks; plant very hardy, vigorous, exceedingly productive.

Suprema, P., large, obtuse cone, bright light scarlet, juicy, sprightly flavor; plant tall, vigorous, robust, very productive.

Supreme Stamineate, H., monstrous, obtuse cone, bright deep scarlet, good flavor, a remarkable berry; plant very vigorous, robust, tall, broad foliage, fair crop.

Prince's Late Globose, P., very large, rounded, bright orange-scarlet, very showy, the berries in large clusters, firm, ripening eight to ten days after the main crop, valuable as a late market berry; plant very vigorous, hardy, exceedingly productive.

[The Iowa is undoubtedly a good stock to work with. What is needed is to cross it with some kind that will give its progeny firmness and flavor. Mr. Prince has sent us a lot of his seedlings for trial, and we shall take good care of them.—ED.]



GRAPE-GRAFTING.

BY EL MEDICO.

By the last mail I received *The Gardeners' Monthly* for the present month, (November,) and while reading it yesterday I found the following on page 347, in the proceedings of the "GRAPE-GROWERS' CONVENTION, AT LANCASTER, PA."

"Mr. Miller grafts his vines above ground, by the usual mode of tongue-grafting, *after* the sap has flowed in the spring: *it can not be done successfully otherwise.*"

If I were disposed to be dogmatic I would say: "*El Medico* grafts his vines above ground by the usual mode of tongue-grafting, *before* the sap has flowed in the spring: *it can not be done successfully otherwise.*" Such would be his language were he to speak only from his personal experience. His egregious failure often

the flow of the sap, under seemingly the most favorable circumstances, will be found humbly confessed and compassionately printed in the January number of this year's HORTICULTURIST. Without denying that others have met with complete success in grafting the grape after the flow of the sap, I must say that my experience, though less extensive, is similar to that of Mr. George W. Campbell, of Delaware, Ohio, who has stated that, after several years' endeavors, he could only attain success by grafting *before* the sap has moved in spring.

With your permission, I will now tell of my "operations" of last spring, and describe their results. A little prolixity will be pardoned when it is remembered that an account of individual "cases" is always more interesting, as well as more instructive, than a simple generalization. The "subjects" of my experiments were a row of 15 Isbellas and another of 14 wild vines in my garden. They were an old, neglected, and "rough set of customers," which an Irishman might say had been "kicked and cuffed all over creation." At least every gardener who had wielded a hoe for my predecessor seems to have given them a whack. Huge, rough, gnarled, knotty things they were, apparently impregnable, both above and below ground. But thinking my cause a good one, I opened the campaign against these rebellious subjects, *as soon as the frost was out of the ground*, in the last days of February, protected by a thick overcoat, and armed with one of Jackson's best English handsaws. Limbs and roots were attacked, and amputated at the most assailable points, and attempts were made to split them. I had as well tried to "split a horn crossways." I was repulsed, and thought I was going to be defeated, when I luckily thought of my surgeon's saw, and put it to a good, if an unaccustomed use. With it I carefully sawed out a thin wedge of wood, which I used instead of a cleft; and where the stump was very large (and some were 4 or 5 inches in diameter) I sawed out a second wedge, at right angles with the first, thus making four places for the insertion of grafts. The sawed surfaces were carefully smoothed with a sharp knife, like a scalpel; and the grafts, with but one bud, were accurately fitted in. A bass bandage was then applied, not to compress the stumps, for they were irrepressible; but, I suppose, only in obedience to orders, in such cases. Soft earth was then put over the grafts, about as thick as bran is put upon a compound-fractured leg. Medical horticulturists will be specially pleased with this description. Now for a few individual cases.

No. 1. (of the Isbellas.) Feb. 25th, five grafts inserted. Delaware. Nov. 5th.
All failed!

No. 2. Feb. 28, two grafts. Delaware. Both lived. Combined length of canes, $32\frac{1}{2}$ feet, large and well ripened. Laterals, 18 feet. Total, $35\frac{1}{2}$ feet.

No. 3. Feb. 26, two Delaware grafts. Both failed.

No. 4. March 12, six Delaware grafts. Three grew. Combined length of canes, 25 feet. Laterals, 12 feet. Total, 37 feet.

No. 5. Feb. 25, two Delaware grafts. Both failed.

No. 6. March 12, two do. One grew. Canes, 43 feet. Laterals, about 10 feet.

No. 7. Feb. 25, six Delaware grafts inserted around a hideous old stump, $4\frac{1}{2}$ inches in diameter. One only grew. Within one inch of old bud five canes sprang out. Combined length, 47 feet. Laterals, 25 feet. Total, 72 feet.

No. 8. March 1, one Delaware graft. Grew. Cane, 4 feet.

No. 9. Feb. 28, six Delaware grafts. Four grew. Combined length of canes, $77\frac{1}{2}$ feet. Laterals, 10 feet. Total, $87\frac{1}{2}$ feet.

No. 10. Feb. 28, four Delaware grafts. One grew. Cane, 8 feet. Laterals, 2 feet. Total, 10 feet.

No. 11. March 1, five Delaware grafts. Three grew. Combined length of canes, 50 feet. Laterals, 5 feet. Total, 55 feet.

No. 12. Feb. 28, two Delaware grafts. Both failed.

No. 13. March 1, five Delaware grafts. One grew. Cane, 6 feet.

No. 14. Feb. 28, five Delaware grafts. Two grew. Canes, 36 feet. Laterals, 4 feet. Total, 40 feet.

No. 15. March 12, three Delaware grafts. One grew. Cane, 22 feet. Laterals, 6 feet. Total, 28 feet.

From the above it will be perceived that I put in 56 Delaware grafts, of which only 20 are now living; so that but little more than one-third succeeded. Fifteen old and worthless stocks were grafted, of which eleven are now converted into (with one exception) very strong and vigorous Delaware vines, for which I would not take \$10 each, as hard as are the times. On the unsuccessful stocks I may try my hand again next spring. I am, as I think I ought to be, fully satisfied with my beautiful row of Delawares. For a single season's growth they are very large, healthy, and well matured, almost to the tips of the canes. The roots are so strong I shall prune them but very little, and allow them to bear all they will.

Now, something about some other varieties which I grafted on the row of wild vines—all males—with which some ungodly nurseryman cheated and disappointed for some fifteen years the former innocent proprietor of the garden.

Vine A. Four Union Village grafts. All failed.

“ B. Five Coleman’s White. 3 grew. Combined length of canes, 60 feet. Laterals, 5 feet. Wood well ripened.

Vine C. Eight grafts of supposed Rebecca, but now believed to be Chasselas. But one grew. The growth was remarkable for size and vigor. The main stem, with six large branches from near the ground, made a united growth of $64\frac{1}{2}$ feet; small branches on laterals, not less than 20; making a total length of $84\frac{1}{2}$ feet. The stem is seven-eighths of an inch in diameter near the ground. The wood is now so tender that I have no hopes of finding it alive next spring, although I mean to cover it well with earth.

Vine D. Three grafts of Union Village. All failed.

“ E. One do. Taylor’s Bullitt. Lived. Cane, 1 foot.

“ F. Two do. do. One grew. Cane, 3 feet.

“ G. Four Annas. All failed.

- " H. Two grafts. Lenoir. Failed.
" I. Six Dianas. One grew. Cane, 10 feet. Laterals, 10 feet.
" J. Two De Candolles. Both grew. Canes, 36 feet. Laterals, 10 feet.
" K. Four Dianas. One grew. Cane, 8 feet. Laterals, 8 feet.
" L. Two Herbemonts. One grew. Cane, 12 feet. Laterals, which were untouched, 71 feet. Total, 83 feet.

Vine M. Two Dianas, on young root, 2 years old. One grew. Cane, 17 feet.

- " N. One Anna. Failed.
" O. One Anna. do.

The Anna is the most refractory of all the Grapes I have attempted to manage. I can neither propagate it by grafting, nor in hot-beds, from single eyes.

A fraction more than a third of my Delaware grafts succeeded; and of the other varieties just a fourth. Yet I have some very fine vines among the latter and feel flattered with my success. Those vines which have failed can be tried again, and if need be, repeatedly, until they are converted into the best kinds. No one who has a wild or otherwise worthless vine in his garden should regard it as a cumberer of the ground. Simply as a stock to graft upon, it is worth several dollars to those who value time.

The question still remains unsettled as to the best time of grafting. Some can have no success unless they operate before the flow of the sap; others, and perhaps the majority, contend that the only proper time is after the sap has begun to move. There are rare cases of skillfulness in which success is as uniformly met with as in grafting the Apple. What is much to be desired is, that teachers of horticulture should throw such light upon the subject as would enable farmers generally to perform the operation.

A few remarks in this connection, but not directly on the subject. A curious fact observed by me was, that nearly every one of my grafts began to grow simultaneously with other vegetation. All put forth two or three leaves in due time, which induced me to think that I would not have a single failure. Some continued to grow, but the greater part stopped suddenly; some for days, some for weeks, and a few for as long a period as *three months*. These latter died, or rather seemed to die; but in June suddenly threw out several buds from around the old bud. These grew with great rapidity; and in the case of a Delaware and a De Candolle, ripened their wood. A Diana, under similar circumstances, failed to ripen the wood.

When they became set, they grew with such astonishing rapidity that they seemed almost transparent for a foot or two from their extremities. They were as tender and fragile as a young cucumber vine, and in several instances were broken off apparently by a sudden fall of rain or gust of wind. But their chief enemy, while in this tender state, was an unknown insect, whose method of attack was somewhat singular. The soft and tender cane was punctured entirely around, as if it had been carefully done with a small pin or needle. The end of the branch

would fall off, in most cases, within an hour after being punctured ; but in a few cases, where the wood had acquired some consistence, the branch recovered, but never perfectly, an elevated ring remaining, which marked a weak spot, where the vine would snap off if an attempt were made to bend it. This vexatious and somewhat discouraging matter turned my attention to the science of "bug-ology," and I sought diligently for information to clear up the mystery. But the limited resources at my command failed to enlighten me. I felt like consulting Dr. Asa Fitch, but knew nothing of his whereabouts. I went out on picket duty against my enemy very often ; was willing to descend to the barbarity of bushwhacking, any thing to rid myself of them. But I never caught them off guard ; indeed, am not sure that I ever saw a single individual. They must certainly have had masked batteries. And thus it is I do not know whether they belong to the order of big bugs or little bugs, or bugs of any kind. Some friends charged the damage upon cut-worms, and to *head* them I applied bands of raw cotton at the surface of the ground. But they must have been innocent, as I found twigs cut off or punctured twenty feet from the ground. Ants were next accused, and they were attempted to be dosed with "Lyon's Magnetic Powder." The evil continued. Another experimental preventive was a strong decoction of aloes, poured over the tender shoots. Another failure ; and so with all. Can Mr. Mead tell me the name of this secret foe ? My suspicions are very strong against the *Curculio* ; for during these forays upon my vines, I found many of them upon the leaves, which they seemed to eat and subsist upon. They had a cunning trick of falling *dead* to the ground as soon as they saw me coming ; but I surprised and captured enough to satisfy me that they were the true stock. As I have neither plums, nor apples, nor pears, nor cherries, for them to prey upon, may not necessity have driven them to the tender grape-shoots ?

Another disconnected remark : A late meeting of the Cincinnati Horticultural Society condemned the Taylor's Bullitt Grape as "worthless." "Quality excellent" are the words used in regard to it in report of Committee of the late *Grape Grower's Convention*, at Lancaster, Pa.

Between such august doctors I will attempt no decision ; but would say, that of all my many varieties there is none which can compare with it in beauty of foliage, and few, if any, excel it in vigor. These qualities, with its hardiness, adapt it, above all other vines, to ornamental purposes.

[We are greatly pleased to know that your perseverance has been rewarded by a considerable measure of success. Your article will be very interesting to every man who grows a vine. In regard to the time of grafting, whether just before or after the flow of the sap is a matter of less importance than the proper condition of the graft. We shall endeavor to explain this by-and-by. Your "bug" may be the *Curculio*, but we are inclined to think it is a small brown beetle, which you will do well to look after next season. With us the Taylor's Bullitt is a rampant grower. It has not yet fruited ; the fruit that has been sent to us, how-

ever, has not been good. We suspect there are two plants out under this name. Do not let it be long before we hear from you again.—ED.]

AMERICAN SHADE TREES.—NO. V.

BY C. N. BEMENT.

THE associations with the beauty of trees about our country homes enter deeply into the very best elements of our own character; and we hope that what we have written may induce some of our readers to plant trees for the purpose of increasing the comfort and beauty of the quiet homes of their wives and children. There is nothing which so agreeably impresses us as the evident partiality for trees and flowers which marks the progress of improvement, clearly indicating the existence of good taste on the part of the inhabitants, while it manifests the general growth of refinement. The object of these communications is to awaken a deeper sense of the blessings by which they are surrounded, and lead them, or any of them, to resolve to preserve the old and plant new trees.

"It is not easy," says a writer, "to measure the influence which a few individuals in any town or neighborhood may exercise in disseminating a partiality for such adornments of the mansion and surrounding grounds. And of all the productions of the organic world, what so grand as trees? What so sweet as flowers? so beautiful as birds?" and may we not add, what country has Providence so bountifully supplied with all these as the Americas? The variety and magnificence of our autumnal scenery have extorted admiration, even when beheld by the jaundiced eyes of tourists, as ready to find fault where none exists, as to express the many which candor must not allow us to repudiate.

No element of beauty is so completely managed as trees; and our resources in that respect are surprisingly great. Situated in the middle of the temperate zone, we have all the best of deciduous trees of the temperate regions, together with the finest of the evergreens of a more northern climate. Each tree has its own color, or rather its own class of color—tints and shades which belong to it, and to it alone. Early autumn becomes gay with the vivid crimson of the Tupelo and the Sumach. A little later come out the rich orange and yellow of the Sugar Maple, with the gold and scarlet of the red-flowering Maple. The olive tints of the Ash, the warm browns of the Hickory, the buffs and yellows of the Birches, give place at last to the full scarlets, yellows, and browns of the Oaks, many of whose leaves remain adhering through the snows of winter. These and forty other trees, and twice as many shrubs, furnish an inexhaustible storehouse of colors, as they do of foliage. It would be endless to speak of the adjuncts of trees, the climbing shrubs, the Virginia Creeper, so remarkable for its richness of fading colors, the Ivy, the Bittersweet with its orange-colored flowers,

and the climbers which naturally attach themselves to our trees, and which may be trained upon them in cultivation. All these are studies, and their daily observation will add immeasurably to the pleasure of the contemplative man, who dwells in or traverses the country in autumn with the eye of the painter, and the feelings of a poet, or with those of a worshipper of the Author of these beauties.

There are many species of trees and shrubs found in our own woods and fields, far more beautiful than a large proportion of the exotic kinds, which are carefully and extensively cultivated for ornamental purposes. Indigenous shrubs have been employed to a limited extent for embellishment; but their merits are more appreciated as they become better known and better understood. Some of the most splendid kinds have been transplanted from the forest to pleasure grounds, lawns, etc., and are much admired and highly prized.

It is surprising how small is the number of trees necessary to produce a striking effect. Ten or twelve trees, fortunately or skillfully disposed on the sides or brow of a hill, are often sufficient to give an air of richness harmonizing perfectly with a highly cultivated country. The happy effect of three or four trees on an island, gives an agreeable relief to the eye. A single tree by a farmer's house protects it, and gives it a desirable air of seclusion and rest, as it must be the residence of contentment. One almost covets a house so pleasantly situated. While an unprotected, solitary house seems cheerless, and to shiver in the north wind, and we involuntarily wish for the inhabitants a more cheerful home. Why should not at least one tree be found near the dwelling of every man, even the poorest and the humblest?

The Beech.—Next in order to the Oak, the Beech claims attention; but in beauty and symmetry it stands almost without a rival. These trees, as single ones in park scenery, attain a magnificence of stature that is altogether striking. In distance it preserves the depth of the forest, and even on the spot, in contrast, it is frequently a choice accompaniment. In its autumnal hues, it is often beautiful. Sometimes it is dressed in modest brown, but generally in glowing orange, and in both dresses its harmony with the grove is pleasing. About the end of September, when the leaves begin to change, it makes a happy contrast with the oak, whose foliage is yet verdant. Its branches, though small, are numerous, and it forms a deep shade. The Beech is fertile in "mast" or nuts, from which the trees may be raised in abundance, provided it be collected in time, that is, so soon as it falls, and preserved till March in dry sand; but it will not generally be good after the first year. The seeds germinate freely, and attain a few inches in height by the first autumn; they may then, or what is better, late in March following, be removed to stand in nursery rows till fit for final transplanting.

The Beech forms a handsome, compact hedge: planted as the thorn, duly cut down, kept trimmed, and brought to regular figure, it makes a close fence, and

while young, retains its leaves during winter ; which, though not green, yet afford some protection.

The American Plane Tree.—This tree, in New England, is generally known and called the Buttonwood. Sycamore is a name often given it ; and it is sometimes call Plane tree. In England it is called the Occidental Plane, to distinguish it from the European, which is called the Oriental. Plane tree or Palatane is classical, but Buttonwood is the good English descriptive name which belongs to it. The Oriental Plane tree is celebrated in history, having had a place in all the public and private grounds of the Greeks and Romans, as well as of the Eastern nations. The American is not less remarkable for its size and grandeur. It is also remarkable for the rapidity of its growth, especially when standing near water in which situation it grows rapidly. It is one of the loftiest trees, and its lateral branches, being of great length, give it extraordinary breadth. It also runs up to an unusual height, compared with other trees, before it forms a head, so that its lower branches are sometimes elevated above the roofs of the houses of common height. Hence it would be a valuable tree for road sides, if it were healthy, as it would allow the largest vehicles to pass under its branches. Loudon mentions one of these trees, standing near a pond, that had in twenty years attained a height of eighty-six feet, and a head of the diameter of forty-eight feet. The Button wood has been cultivated in England more than two hundred years.

The Birch.—This family consists of graceful trees and shrubs, natives of colder regions of each hemisphere. No trees are more distinguished for their light and feathery foliage, and the graceful sweep of their limbs, than the Birches. From the delicate and slender Gray Birch, throwing its thin, delicate leaves, and often pensive spray, lightly on the air, to the broad-headed Black Birch, with its rich, glossy, and abundant foliage, weighing its pendulous branches almost to the ground, no family of trees affords such a pleasing variety of aspect.

The Black Birch is easily distinguished by the dark color of its bark. It is the most beautiful, and, for the useful qualities of its wood, the most valuable of its species.

The Yellow Birch, in its native forests, is a lofty tree, lifting its head into the sunshine among the Hemlocks, Rock Maples, and Ashes, with which it grows. It is distinguished by its yellowish bark, of a soft, silken texture, and silvery or pearly lustre. The Yellow Birch has not often been cultivated for ornament, but it has great beauty. In travelling, we sometimes see it on the edge of a wood, with its abundant soft, green, often drooping foliage, between masses of which is seen the gleam of the light bronze trunk, with its silver and pearly lustre, showing what might be its effect introduced in ornamental woods in our pleasure grounds, parks, etc.

The Red Birch is somewhat different in aspect and character from the other birches. It is usually found bending over a stream, with its roots always in the

water or growing in company with the Swamp Oak or Red Maple, in places which, during one half the year, are inundated. When erect and standing alone, it is a singularly graceful tree, with its upper limbs long and sweeping out like those of the Elm, and its trunk almost clothed with small branches. Usually, it is remarkable for throwing out many small branches above.

The White or Paper Birch.—This tree grows naturally on the banks of rivers, and in moist, deep soil, flourishing in almost any situation, but never attaining a very large size. It is a picturesque tree, the points of light from its white trunk producing a brilliant effect in the midst of its soft, but glittering foliage, hanging, as we often see it, over some mountain stream, or sweeping up with a graceful curve from the side of its steep trunk.

NEW METHOD OF RAISING MUSHROOMS.—The following new and simple method of growing Mushrooms we find described in the French correspondence of the *New York Times*. The French are noted for their ingenuity and the application of the principles of science to matters of daily life. How far this new method is superior to those now well known, we are unable to say; but it is simple, and we shall try it, and trust some of our readers will do so too. The method is described as follows:

"A method has been discovered and reported to the Academy of Sciences for producing mushrooms artificially in any locality. Dr. Labourette, the discoverer, first develops mushrooms by placing spores on a glass on which he has spread sand and water. He selects the most vigorous ones, and it is with the mycelium of these that he obtains the magnificent specimens of mushrooms he exhibited to the Academy. He disposes his ground in the following manner: Some damp earth, composed of vegetable matter from a swamp, and placed in a cellar, is covered with a layer ten inches thick of sand and river gravel, and this, in turn, by another, composed of plaster derived from the demolition of houses, six inches thick. He sprinkles this earth-bed with water containing two grammes [thirty-one troy grains nearly] of azotate of potash to the square yard, after having first sown thereon the mycelium. The specimens shown at the Academy had grown in six days, and the discoverer asserts that the action of the azotate of potash lasts six years."

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the Editors and Proprietors, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OUR NEXT VOLUME.—We wish to remind our readers that our new volume, the seventeenth, will commence with the new year, and that it is our intention to make it the best ever issued. All that appertains to the orchard and garden, rural improvements, and kindred subjects, will be found fully and practically treated in the pages of the Horticulturist. The January number will be issued early in December. We shall print a large extra edition for distribution, and wish that each of our subscribers would interest himself in making up a club, our terms for which are so favorable as to make this the cheapest publication of its kind known. For six dollars we will send four copies; and to any one who will procure six new subscribers, and send us nine dollars, we will send a seventh copy gratis. The same discount to clubs will be made on the edition with colored plates, which we commend to all. Our full club rates may be seen on the cover. The bound volumes for 1860 and 1861, which we offer at premium rates to new subscribers, are among the most valuable of the whole set, and make a good beginning for preservation in libraries, to which they will make an elegant and valuable addition.

OUR DAY'S RIDE.—We have been unable to continue this for want of room. We have yet to finish Fishkill and Newburgh; and then take the reader a pleasant trip over the Raritan and Delaware Bay Railroad down to Tom's River, where Cranberries grow wild and Oysters are sold at fifty cents a bushel.

GOOD FOR JANESVILLE.—Mr. J. C. Sloan, of Janesville, Wis., sends us a club of 20 subscribers for 1862, which he says he obtained by very little effort, and expects to add hereafter many additional names. One hardly knows what he can do until he tries, and the success Mr. Sloan has met with should stimulate each and all of our subscribers to do as well. Our lowest club price makes it the cheapest magazine of its kind and size in the country, and as we intend the volume for 1862 shall rival all others in its excellence, we commend it as a valuable investment. Janesville is situated on Rock River, seventy miles west of Mil-

waukee, and on the borders of one of the most fertile and beautiful of prairies. It is surrounded by a fine country, and settled by an enterprising and intelligent class of people. It has a fine water power well improved, is a railroad centre, and ranks high among the leading inland cities of the West. It is now a city of upwards of 10,000 inhabitants, and in society, educational advantages, commercial intercourse, and business spirit and activity, will compare favorably with any similar sized eastern town.

A BIG BEET.—Preston Hodges, Esq., of Stamford, has sent us a Mangold Wurtzel weighing upward of twenty-five pounds. It is almost large enough for a meal for an elephant.

EXHIBITION OF THE AMERICAN INSTITUTE.—Not having had a public fair this year, the Institute has determined to hold an exhibition at its rooms in the second week of February next. It will be confined to improvements in Agriculture, Manufactures, and the Arts, for which the gold and silver medals of the Institute will be awarded. We hope the enterprise will be liberally supported. Circulars may be had on application to the Institute.

Correspondence.

P. B. MEAD, Esq.—*Dear Sir*,—I take the liberty to send you, pre-paid by Express, a few bunches of grapes, grown upon a vine found a few years since in the garden of the late Dr. Spofford of this place, where the To Kalon originated. Will you be so kind as to inform me what variety it is, and whether you consider it worthy of dissemination. Good judges here pronounce it superior to Diana. The vine is perfectly hardy, and the fruit ripens ten days before Isabella.

Lansingburgh, N. Y., Oct. 22d, 1861.

A SUBSCRIBER.

[The above was duly received, for which please accept our thanks. In answer to our subscriber's queries, we remark, that the grape is entirely new to us, being distinct from any now in cultivation, but resembling somewhat a seedling we received from another quarter. We desire to compare the two more closely. We have no hesitation in saying that it is worthy of dissemination. The bunch and berry are above medium size, and of the best quality. The color is not very attractive, being of a dull claret or red; the color, however, constitutes one of its distinctive features. We have a drawing in preparation, with which we shall give a description. This and Mr. Mercer's grape we can cheerfully endorse.—Ed.]

MR. PETER B. MEAD:—*Sir*: In your remarks on my note of correction, about the name of Camellia Cochlidea, you make some statements, which require a few words in reply.

You state it was proper to call Mr. Humphrey's plants, the "original stock."

If Mr. Becar had never raised any but the seedling plant, and Mr. Humphrey procured it from him, then he might claim having the "original stock;" but as Mr. Becar raised several, and they being distributed among different parties, Mr. Humphrey's has no more right to be called the "original stock" than any of the others.

The only "legitimate" authority to name a seedling is the raiser thereof. And the plant of my friend the amateur, coming from the collection of Mr. Becar, being duly purchased, (know nothing of the stolen plant, hearing of it from you for the first time,) and declared by the seller to be the *only* plant in existence; the amateur therefore being possessed, as he thought, of the *true* "original stock," unbaptized, was certainly then the duly accredited namer. I fail to see why *Cochlidea* is not as legitimate as *Spiralis rubra*, which you name it, after it has been known to the public for at least three years as *Cochlidea*.

I need only reiterate my former statement, that as *Cochlidea*, it is pretty well known in the vicinity of New York. It is to be found as such at Mr. Buchanan's and Mr. Bridgeman's, and probably some more of the florists, and in several of our first class collections. But we need not wonder at your not being fully posted on this matter, when we know that the two best private collections of *Camellias* in New York, both containing the disputed plant, have never yet been honored by an inspection from the Editor of the Horticulturist.

Until you show us why the name ought to be changed to *Spiralis rubra*, I don't see why we should not stick to its equally "legitimate" and older one of *COCHLIDEA*.

UNDE.

[It seems to us that Unde has pre-determined not to understand what we said, and it is always a difficult matter to convince a man against his will. Yet, with singular inconsistency, he admits precisely what we claim, viz., that Mr. Humphrey's plant having come from Mr. Becar's collection, it is proper to call it original stock; so, also, it is proper to call Unde's friend's plant original stock. Unde must understand as well as we do, that by original stock is not meant the original plant. In regard to naming a plant, the legitimate authority to do so resides originally in the person who raised it; he can exercise that authority himself, or request others to do it for him; and that is precisely what was done in this case. There is a recognized and acknowledged rule, too, that the person who first publicly describes a plant has a right to name it. Unde's friend may have thought he purchased the only plant in existence, but we *know* that he did not. Mr. Becar never parted with all the plants of any of his selected seedlings; he had plants of them all to the day of his death. We say we *know* it, because it is a matter entirely within our personal knowledge. If Unde's friend had had the only plant in existence, no one would question his right to name it; and we wish to be distinctly understood as having no controversy with him on this point. As to the plant having "been known to the public for at least three years as *Cochlidea*," we have only to say, that Unde's public and our public are bodies of vastly different

magnitude : there is simply a difference of opinion here. Unde reiterates, " that as Coccoidea it is pretty well known in the vicinity of New York," and that " it is to be found as such at Mr. Buchanan's and Mr. Bridgeman's, and probably some more of the florists," which is not quite so immoderate as his first statement. But in this connection we have only to repeat the denial in our last. Thinking it strange that we had not seen it, except as noted last month, we applied personally to our principal Camellia growers, and they assured us it was not among their plants. Being at Mr. Bridgeman's several days after the receipt of Unde's present article, we asked Mr. Bridgeman again if it was in his collection, and he told us it was not, and his word is as good as gold. We could give additional force to this point if we chose. Unde adds, not as politely, however, as he might, that we have never inspected the two best private collections in New York. There may be some difference of opinion as to which are the two best private collections in New York, but we should esteem it a personal favor if Unde would tell us which two he refers to. In one of them he probably refers to Mr. Stewart's. If so, he is mistaken ; for we saw his fine collection of plants long before we saw those under Unde's care. In conclusion, if Unde is not already convinced that *Spiralis rubra* is properly named, we fear we can say nothing that will convince him. If we admit the claim of Unde, we do not see how we can deny that of others who have had it for several years under the name of the Screw, which we discarded as mildly as we could, because of our previous knowledge of the plant. Under the circumstances, we really can not perceive why all the parties should not show their good nature and good sense by letting the matter remain where we have placed it.—Ed.] .

BROOKLYN HORTICULTURAL SOCIETY—CONVERSATIONAL MEETING.—We continue the proceedings of the Conversational Meeting from our last. They are somewhat lengthy, but their interest will fully repay perusal. We find, on looking at our account last month, that the questions are not arranged precisely as they were asked, but the difference is of no great moment. The following is a continuation of Dr. Grant's lecture :

In our discussion of the first question, perhaps the fourth also, incidentally, by its intimate relation to the first, has been sufficiently considered to need no further examination. It is as follows: "Can the native grape be profitably grown for wine-making?"

But the question directs our attention to a field very extensive, and too interesting to suffer us to pass it by without a word of special notice. We shall see that the answer to this will be yea or nay, according to the management of the vineyard. As the native vine (Catawba, for instance) is grown by one man, we shall find it not merely profitable, but largely remunerative. If we state his annual net profit at five hundred dollars per acre of Catawba vineyard for a succession of years, taking the seasons good and bad, (to him, by-the-way, they have never been very bad,) we shall only state what we know has in numerous instances actually taken place. Within sight of these productive vineyards are others upon land as good, and as favorably situated, but badly managed, whose profits have been measured by a minus quantity. In this the vineyard does not differ from any other business which requires manly care. It may be said of the vine, however, with more exactness of truth than of any other subject of culture, that as is its management, so is its return to the husbandman.

The vine is not a being of accident, but, like humanity itself, a creature of circumstances; and if these are favorable, the produce is excellent and abundant. And it is in the vintner's power, as it is his province, with extremely rare exceptions, to make the circumstances favorable. The vine that is trained up in health to full development, and is still continued under good management, has very great power to withstand the trying changes of the seasons, and ability to bring at least a large portion of its crop to maturity in those the most unfavorable. Its care and management are not intricate and difficult, nor are the operations of the vineyard matters of speculation or doubtful propriety, or of uncertain result. They are such as patient, well-informed industry, that feels it a privilege and high honor to co-work with the Almighty Father, will find much pleasure in giving at the right time and season, but such as impatient indolence fails of bestowing at the right time and season, and so comes short of the reward.

In one of the most noted vine regions of this country, there is a committee of distinguished vineyardists appointed to visit the vineyards from time to time during the season, to note their management and condition, and at the end of the season to report the results of their observations. The chairman of that committee, to illustrate his own views of the importance of good management and care, said in my hearing, that if the particulars of the treatment of a vineyard were given to him, he could from the account alone give the result almost as well as by personal inspection: so intimately are management and success connected.

Now the management of the vine must not be regarded as difficult in any one of its operations, but, like the good man's life, it is a *patient continuance in well-doing throughout*; and under these conditions, which are well ascertained, and easily intelligible to any one who, unbiased by preconceived theories, is willing to observe, under the clear light of long-established facts, we may say, without fear of contradiction, that the vineyard affords a more remunerative pecuniary return than can by any other branch of culture be drawn from the bosom of our blessed mother earth.

There are other and even more important considerations rising up and clustering around this one of profit, which must form the base, but upon which we can not now dwell, that have in all ages constituted the calling of the vineyardist the most dignified and elevating of all industrial pursuits, and a good vineyard as the most desirable of possessions.

I have instanced Catawba vineyards, because I desired to give not evidence merely, but actual demonstration by history, of a long succession of years. Some most instructive cases of rise from poverty to wealth and high consideration by means of Catawba vineyards I could relate if time would permit.

The Catawba for wine-making is suited to only a limited range of climate; and although good in quality, it is far from being best; and those very persons who, by the thorough management of their Catawba vineyards, have furnished largely our means of demonstration, have also, by their careful observations and experiments during a series of years, demonstrated the surpassing value of our new varieties, which are perfectly suited to a very wide range of climate. The question must receive an emphatic affirmative answer.

Question 8d.—What is the comparative value of the native and foreign grape as objects of culture for profit?

This question fitly leads, for even a most cursory view of it will lay open to our sight the great importance of the subject commercially since the advent of the new varieties of grapes, which are working a revolution, not the least in importance of those which characterize our age.

If I rightly apprehend the import of the question, a comparison is intended between the culture of foreign varieties under glass for table use, and the cultivation of our native kinds in the open air.

Without violence, the subject may be so enlarged as to make comparison of the prospective value of the investment for the production of foreign grapes for the table, and of the native grapes for the table and for wine. But, restricted to the cultivation of grapes for the table, the parallel may be more easily drawn, and the main points of the case more clearly set forth to our immediate observation. We shall be able to place the conditions and circumstances of both by the side of each other for strict comparison, so that if we treat the subject fairly, we need not fear to fail of arriving at a just conclusion.

To avoid unnecessary complication, we shall consider the foreign grapes to be grown without artificial heat.

If this question had been under consideration ten years ago, the case would have presented a widely different aspect from the present. Our best natives then had too little resemblance to the foreign kinds to permit them to be brought into general comparison, but now we have kinds which, if they blush at all, can only blush with pride at the high rank which they are

able to hold by the side of the best of any country, and particularly for wine. For it was for this purpose that we had almost banished the hope of getting any thing of eminent excellence, and so long had we earnestly looked in vain, that we had begun to call that wine which does not deserve the name.

But to our immediate subject. We can not bring the subject before our sight clearly without the use of some figures, but will avoid their use as far as can be done safely. And we may remark at the beginning, that there is so much that is attractive and deeply interesting pertaining to the viney, that it is not a little difficult to make a rigid calculation of the cost that shall enable us to know its economical value.

To those who have the taste and ability to enjoy the viney as a luxury for cultivation and diversion, as well as for its magnificent productions, it has a real value not to be estimated in dollars and dimes, and consequently can not be placed to account of its commercial value, which we are now seeking to learn.

A house one hundred feet long and twenty-one feet wide will afford accommodation for one hundred and twenty vines. These, under the best of care, may be expected to produce about fifteen pounds each. Much more than this weight is often obtained in a particular season, but not in a succession of seasons.

An average of the actual product will fall below this, but the best management may fairly hope for this amount. I have named twice as many vines as are generally given to a house of this size, for without this number and by the ordinary method of training, I do not believe more than two-thirds of the crop named can be obtained during a succession of ten years.

This structure alone, if built as cheaply as possible, consistent with full efficiency and due regard to durability, may be made for six hundred dollars, apparatus for watering not included.

[The doctor's figures are too low here. A substantial, durable house, one hundred by twenty-one feet, can not be built for this sum. A very cheap house is always in the end a very dear one, the cost of keeping it in repair being out of all proportion to its estimated value.—En.]

To occupy this ground fully with Delaware vines to the best advantage in exact syste m they should be planted in four rows, which would contain in all one hundred and forty-eight vines, as follows: The first to stand one foot in advance of the fence, containing fifty vines two feet apart, trained in full Thomery plan; the second, eight feet from the first, containing forty vines two and a half feet apart, in three-fourths Thomery plan; the third, six feet from the last, containing twenty-five vines, in half Thomery plan; and the fourth four feet from the third, containing thirty-three vines, according to the most approved vineyard plan, containing thirty-three vines. The height of the trellises will be about nine feet for the first, seven for the second, five for the third, and three for the shoots upon the arms of the fourth.

The first may be expected to produce seven hundred pounds, or fourteen pounds per vine; the second five hundred pounds, or twelve and a half pounds to the vine; the third four hundred pounds, making sixteen pounds to the vine; and the fourth two hundred pounds, being about six pounds to the vine, making eighteen hundred pounds in all, which is truly a large amount, but still a very low estimate, and considerably within safe calculation.

We have supposed the cost of border to be the same in each case, and so we shall continue it in our calculation; but, in fact, our border for the natives would cost twenty-five per cent. less than the border for the viney. For the natives the fence and trellis would be required for training and protection, which the viney would furnish in itself. This would be less expensive than the watering apparatus, including cistern and tanks; but to avoid, as far as possible, estimates in figures, which are difficult to keep in mind, we will balance each with the other.

In our calculation injustice has probably been done to the natives in the estimate of the crop. As the result of ten years' careful observation, I must avow the belief that the open border, with the proper attention, will produce, for ten consecutive years, as great a weight of perfect fruit as the viney. But we will proceed as we have begun, in the proportion of one third less; and we will also concede the same proportion in the value of the fruit.

For the foreign grapes, 1,800 pounds at 35 cents per pound, the sum would be \$630; or, in round numbers, \$600. For 1,200 pounds of the natives, at 20 cents per pound, the amount would be \$240. This gross sum, compared with the \$600 from the viney, is unquestionably small. But we shall soon see that the cost is also small, and that not merely the relative profit, but the absolute profit from the border, is as great as that from the viney.

At the end of the third year the cost of the viney will not be over-estimated at \$1,000; even \$1,200 may probably be too little. As a large part of this is perishable and in need of frequent expensive appairs, such as painting, etc., less than 20 per cent will not equal the value of the same at lawful interest. This will amount to \$200, and the cost for attendance can not be much less. We shall not have more than \$200 net after all expenditures are deducted.

On the other hand, our border, at the same time, will not stand us in more than \$350, and the cost for attendance will not exceed \$25; so that for the vine in the open air the annual expenditure, including interest, will scarcely exceed fifty dollars; thus leaving nearly, or quite, \$200 net profit for our twentieth part of an acre under high culture.

As we have, throughout the comparison, been very liberal to the vineyard and rigorous with the border, we will still do so, and allow \$65 for expenditure, which still leaves all that we dare take as net earnings of the border.

It must be remarked in passing, that no one who has compared the fruit of the Delaware with other kinds, native or foreign, and enjoyed its excellence, will be able to conceive of its bringing less in market than the best Black Hamburga. Objection is made to its size, but not by those who are conversant with the elegance of its translucent berries and fine, compact bunches, whose beauty needs not the unseemly marring to which the Hamburgs must be subjected before presentation to be enjoyed. The same objection has been made to the Seckel Pear, and yet its surpassing merit still commands the highest price.

The comparison between the cultivation of grapes under glass and in open air, has been made upon the same extent of ground for a three-fold purpose, which will soon appear in the examination of the other questions.

Let us now see what the cost of the vineyard will do invested in one acre of vineyard. It is just the amount that, under favorable circumstances, will bring to productiveness at the end of the third year one acre of Delaware vineyard, purchase of vines and all expenditure, except cost of ground, included.

If good vines have been chosen, and every operation has been well performed, at the end of the third season the vines will be carrying an average of four pounds each of perfect bunches of grapes, or four tons to the acre. This is about one-third the quantity that Delaware vines are generally suffered to bear at this age, and is much below what may be borne with safety.

We need go no farther with this calculation. Beheld at a distance, it makes the profit of the vineyard in the foreground appear quite diminutive, when we consider that the attendance of the vineyard of one acre will cost less than that of the vineyard of one hundred feet, and that the crops are produced with a certainty to which the vineyard can put forth no claim.

If the price of the grapes is estimated at a low value for wine—ten cents per pound—the amount will be eight hundred dollars. But until the lovers of good fruit are supplied who have no vines of their own, good Delaware grapes will not be sold at a price that will net less than twenty cents per pound, nor within a few years at a price so low as that. This will give sixteen hundred dollars, less expenses, which will all be less than two hundred dollars.

I think we may safely arrive at the conclusion, that, with such varieties as we now have, the cultivation of the native hardy grapes offers much better profits than the cold viney. And it may further be announced, without fear of contradiction by any one who has taken care to be well informed on the subject, that grape culture is not only inaugurated in this country, but is far advanced in the sure way of progress that shall make it here, has it has ever been in *all* the vine growing countries, "*The grand culture.*" All branches of culture are deeply interesting to the man of contemplation and feeling, but in different degrees; and the vine not only includes the interest of all except that of the Florist, but excels them all in its reflex action in cultivating the mind, the sentiments, and the heart.

The vine alone could be fitly chosen to illustrate the vital union of Deity with humanity and the husbandman of the vine justly feels the high recognition of the excellence of his calling by the most tender comparison ever expressed in language being drawn from his own relation to the vine.

Question 6th.—Is not some good system of training indispensable to the continued productiveness and longevity of the vine?

This question suggests a very wide field of speculation, upon which we will not stop this evening. A very few remarks will be sufficient to set forth clearly our affirmative position, and by the kindness of Mr. Bridgeman we have at hand just the vine which is desirable to illustrate this part of our subject. This vine, although now in a pot, is in all respects as a vine should be in garden or vineyard when well grown preparatory to training according to any judicious plan. I am not about to advocate any particular plan, for there are many whose merits are well known and universally recognized for accomplishing both the general and specific ends of training. The general object aimed at in training is the production of good wood, which shall produce large crops with certainty, and continue the vine in perpetual health. Without the aid of man it wastes its strength in apparently sportive efforts, and not only fails to produce good fruit within prescribed limits, but also fails to maintain its own health. The vine before us consists of one shoot, which is the present season's growth. It is about six feet high, of strong, well-ripened wood. Its leaves are large, thick, and fleshy, with a firm leathery feel which denotes the healthy development, which is the result of good management and care.

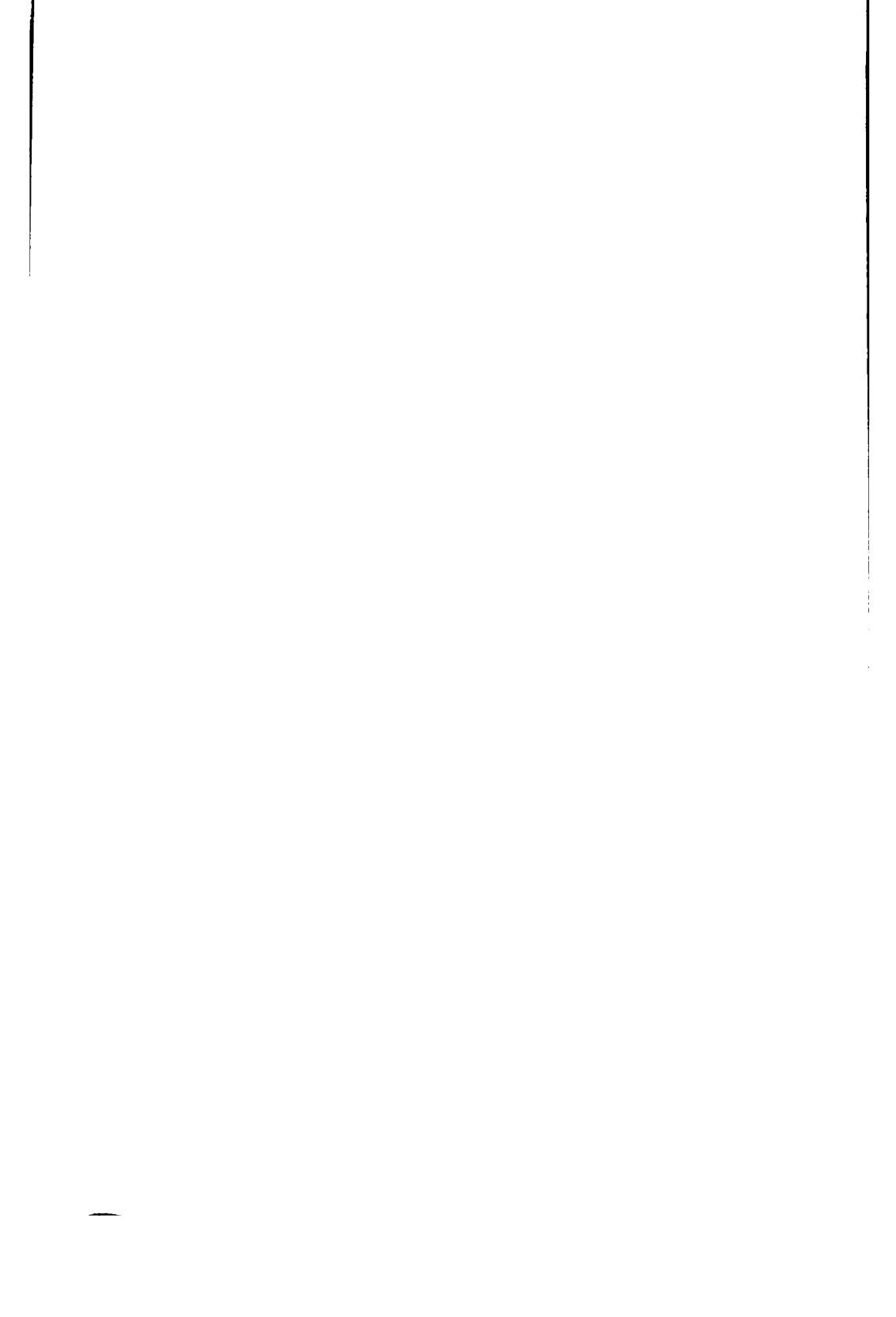
At the junction of each leaf with the main shoot is a bud lying in the embrace of the foot-stalk of the leaf, and what appears to be the short stump of a shoot, on which may be seen two or three leaves. These leaves, as we shall soon see, are not unimportant. These stumps would have been each shoots of considerable length if they had not been "stopped;" that is, had their ends pinched off in their early growth. They are called laterals, and this pinching is one of the operations called summer pruning.

If these had been suffered to grow, instead of one tall, stout shoot, beautifully furnished with its strong healthy leaves, we should have had many slender shoots and a multitude of small, thin, unhealthy leaves, whose strength would not have been sufficient to enable them to resist uninjured the trials to which they are always subjected by atmospheric changes during the period of growth. Instead of one strong youth, now ready to take a short winter sleep, and wake in spring to perform joyfully the labors of early manhood, we should have a great number of feeble infants, that might have the misfortune to survive the winter, but only to linger through a short and profitless existence. These little stumps of the laterals are not now joined to the main shoot by a strong woody union, but only by inoculation, little more firmly than the leaves, and will fall off in spring if not removed. If suffered to acquire strength, they form a strong woody union, and become branches, and damage or destroy the bud at their base. At the base of every well-developed leaf at its first formation are two buds, one of which very soon shoots forth, and becomes the lateral of which we have spoken. These are called the anticipative buds. By the side of these are now to be seen the other buds, which are called dormant buds, and which will make the shoots of next season. When well developed, as on the specimen before us, they are often called fruit buds, because the shoots which spring from them will put forth flowers, and, under proper circumstances, produce fruit. Of these strong buds you will see there are some 25 or 30, each of which will produce a shoot, and each shoot will attempt to produce three bunches of grapes—that is, from 60 to 90 bunches. If we attempt to keep all, we shall not succeed, and shall probably fail of getting one good bunch. We shall get a great number of shoots in the form of side branches, which will vary in length from three to twice three feet, all of which will be covered with innumerable small leaves, none of which will be strong and healthy, and, consequently, none prepared to give any good fruit the next season. Here, then, we shall have a worthless vine which will require as much room as an orchard tree, and occupying as much space as four productive vines.

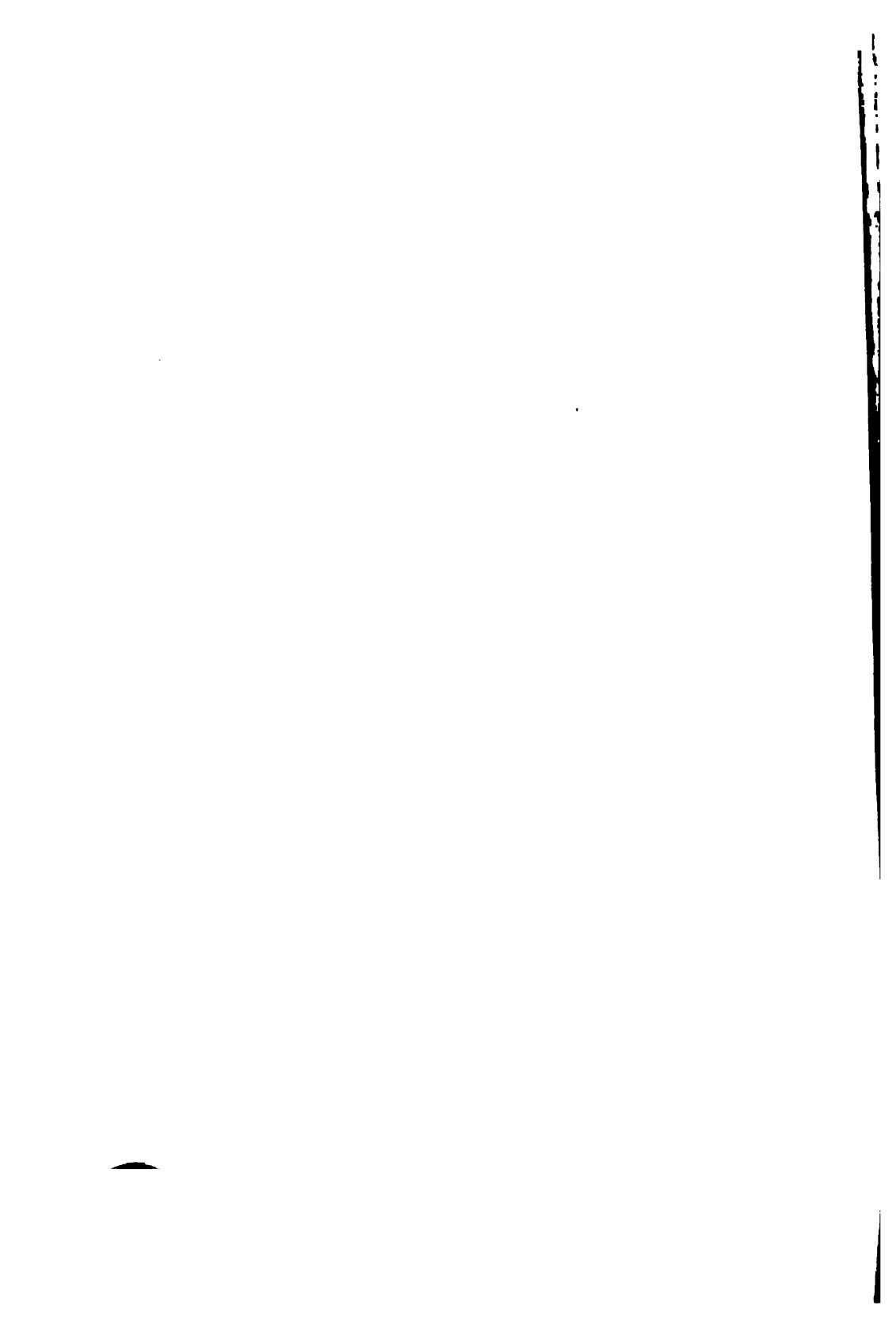
Now let us subject our vine to training, and behold the result. We will cut it off at the fifth bud from the bottom, and in the spring, when these five buds shoot forth, we will rub off the two lower ones, and for a time suffer the other three to grow. Flowers for three bunches of grapes will appear on each. Just before these open, stop each of the lower shoots at the second leaf above the upper bunch, and tie the third one to the stake to grow to a tall shoot, as was done the season before. Take off the upper bunch from each shoot, and six will be left, which will give six bunches of mature fruit. Laterals are to be stopped as before. We have followed the vine only through two seasons of its early age, but I think all who have favored us with their attention must have seen clearly that the vine can not give good results without systematic training, which supposes a course of pruning also. By this we aim to produce just so much good wood as we have learned, by experience and careful observation, will best occupy a given space, in which we propose to train each vine, and to effect its equal distribution over the allotted area, so that not only each branch or shoot shall occupy uncrowded its proper space, but each bunch and leaf also. As the vine advances in age the indispensable need of these operations becomes more clearly obvious.

By any good system which is founded upon accurate knowledge of the vine, its management is easily accomplished, and without it no vines, in garden, house, or vineyard, have ever produced good results for any length of time. If any lady wishes to be her own superintendent, she may be assured, that by taking the vines from the first planting, she will find the matter so simple and pleasant that the charge of vines enough to produce one ton of grapes yearly will be found to be a most interesting diversion rather than a burdensome care.

And we may safely say to all who desire to grow good grapes, that after proper entertainment is furnished to the roots of our best hardy kinds, the only specific required to enable them to meet uninjured all the ills to which vines are supposed to be incident, is a good system of raining faithfully carried out.









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